

# **U.S. Airline Passenger Trip Delay Report (2007)**

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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 airline flights.

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

This report supplements government and airline industry reports that focus on *airline flight* and *air traffic control* performance.

## Definition of Passenger Trip Delays

Passenger Trip Delays are the delays experienced by passengers at the time of arrival at the gate at the intended destination airport. The delay is computed relative to the scheduled arrival time 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. See sketch on the next page.

## 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

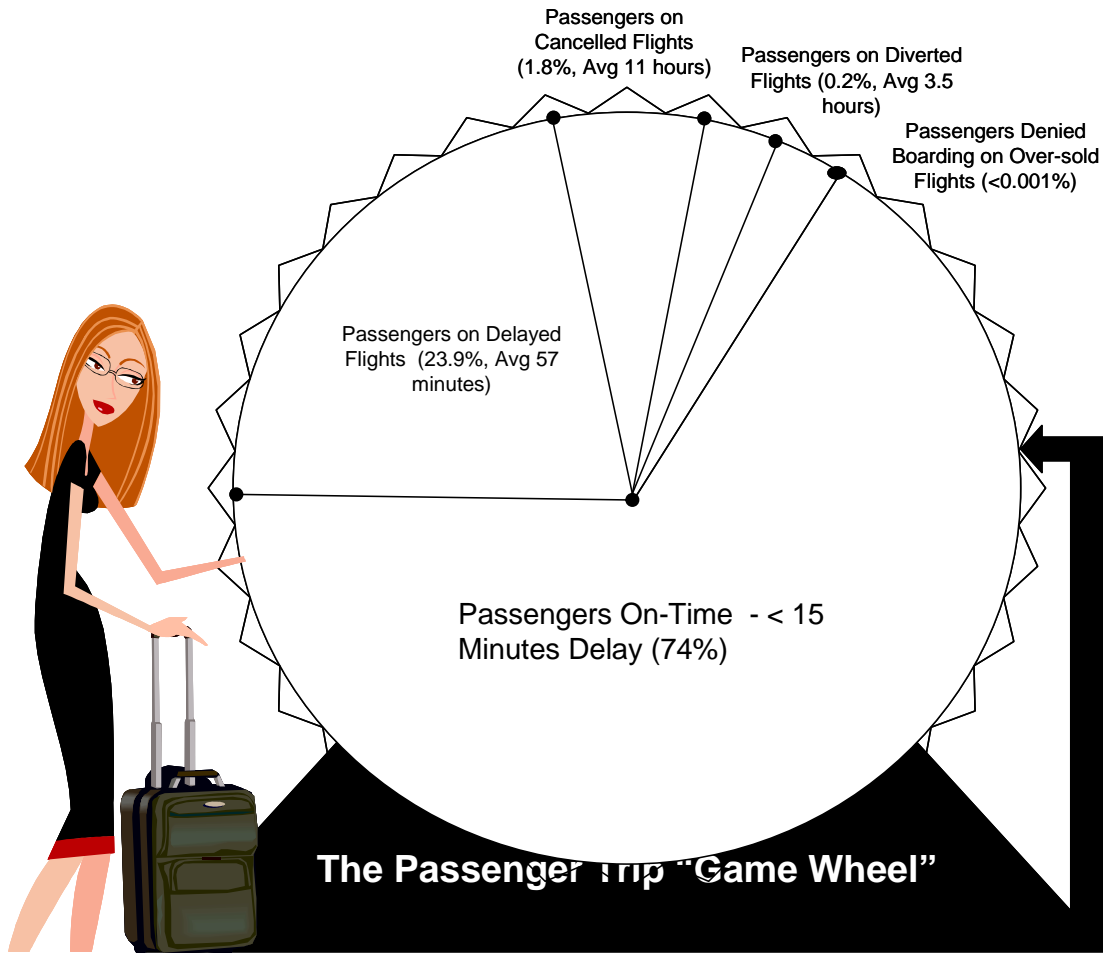
(ii) the long right tails exhibit significant delay penalties. In the case of Passenger Trip Delays there are a growing number of “unlucky” passengers in the tails of the distribution that experience significant disruptions to their travel.

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.

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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## **2007 Results**

Delays experienced by passengers flying domestic routes in the U.S. were up sharply over 2006.

**Total Passenger  
Trip Delays in  
2007: 32,477 years**

Total passenger trip delays were up 29% over 2006 to a total of 281.4M hours (or 32,477 years).

**Total Passenger  
Trip Delays  
increased 29% in  
2007**

A conservative estimate places the annual cost of these delays to be \$8.5 billion in lost productivity to the nation's economy.

**Cost to economy  
\$8.5B per Year**

In 2007 647 million passenger trips were flown by U.S. domestic airlines between 267 airports on 7.4 million flights. This equated to a 4.5% increase in passengers over 2006.

The large increase in Total Passenger Trip Delays was the result of the combination of fewer empty seats on flights and an increase in the number of canceled flights. The passengers on cancelled flights were forced to wait significantly longer times for their re-booked flights. Many passengers were forced to spend the night before resuming their trip the next day.

In 2007, the average Passenger Trip Delay experienced across all airline passengers was 26.3 minutes, up 5 minutes (+23%) from 2006.

Roughly 1 out of 4 passengers (26%) experienced a Passenger Trip Delay in 2007, a 2% increase over 2006. The average duration of the delay experienced by these disrupted passengers was 1 hour 54 minutes, a 24 minute increase over 2006. See table on next page.

**Delays for disrupted  
passengers  
increased by 24  
minutes (a 26%  
increase over 2006)**

Passenger trips were disrupted by 4 categories of delays:

1. Passengers on Delayed Flights: In 2007, 23.9% of the passengers were on flights that were delayed. These passengers experienced an average delay of 57 minutes, an increase of 2 minutes from 2006.
2. Passengers on Cancelled Flights: The percentage of passengers on cancelled flights increased from 1.4%% in 2006 to 1.8% in 2007. Because there were fewer empty seats on subsequent flights, passengers on cancelled flights were frequently re-booked on flights the following day resulting in overnight stays and significant trip delays.

The average delay for these passengers was 11 hours, a 10% increase over 2006.

3. Passengers on Diverted Flights: The number of passengers on diverted flights remained fixed at 0.2% of total passengers.
4. Passengers Denied Boarding on Oversold Flights: The number of passengers denied boarding due to over-sold flights increased by 14% to 1.14 per 10, 000 passengers. These passengers experienced no change in trip delays from 2006. Even with less empty seats on each flight, the airlines were still able to accommodate these passengers on the next available flight.

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

	Percentage Passengers			Average Passenger Trip Delay		
	2007	2006	Change (+ worse)	2007	2006	Change (+ worse)
Passengers Experiencing Trip Delay (>15 minutes)	26%	23.5%	+2.5%	1 hour 54 minutes	1 hour 30 minutes	+24 minutes
• Passengers on Delayed Flights	23.9%	21.9%	+2%	57 minutes	55 minutes	+2 minutes
• Passengers on Cancelled Flights	1.8%	1.4%	+0.4%	11 hours	10 hours	+1 hour
• Passengers on Diverted Flights	0.2%	0.2%	No Change	3.75 hours	3.75 hours	No Change
• Passengers Denied Boarding on Oversold Flights	<0.001% (1.14 in 10,000)	<0.001% (1.01 in 10,000)	No Change	3 hours	3 hours	No Change

## **Airlines in 2007**

Airlines exhibited a wide range of performance in 2007 ranging from an average Passenger Trip Delay of 4.3 minutes to an average delay of 29.5 minutes.

Passengers on the airlines with lowest passenger trip delays experienced, on average, 6 times less delay minutes than passengers on the airlines with the highest trip delays.

No airline exhibited reductions in passenger trip delays. In contrast, passengers on six airlines experienced increases in passenger trip delay. In particular, the average passenger trip delays for passengers on Jet Blue Airlines flights increased by an average of 10 minutes.

Passengers experienced the least amount of trip delays on Hawaiian Airlines, Aloha Airlines, Southwest Airlines, and Frontier Airlines. These airlines operate out of non-congested airports. In the case of the Hawaiian airlines, airline operations are not systematically impacted by convective weather in the summer or snow storms in the winter.

Passengers experiencing the most amount of trip delay 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 airfares, 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 airport, or accumulation of snow)

The fact that the airlines, as a group, have been unable to reduce passenger trip delays, while at the same time demonstrating significant innovation in increasing productivity and cutting costs per seat-mile indicates the presence of systemic problems in the way the commerce of the industry and it's supply chain is regulated and governed.

## **Airline Ranking**

Seven airlines improved their ranking over 2006. Five airlines slipped and five airlines maintained their ranking over 2006.

Alaska Airlines and Colgan Air (operating flights for US Airways Express, United Express, Continental Connection) improved their ranking by four positions from 2006.

**Passengers on six of the major airlines experienced an increase in Passenger Trip Delays.**

**No airlines were able to improve performance to yield a reduction in Passenger Trip Delays**

Passenger-friendly JetBlue Airlines tumbled 5 positions from 10<sup>th</sup> down to number 15<sup>th</sup>.

See Appendix - Table 1 for Annual Passenger Trip Delay for Airlines reported by the Bureau of Transportation Statistics.

### Ranking of U.S. Domestic Airlines

Rank	Airline	Average Passenger Trip Delay	Change in Rank from 2006 (+ improved)
1 (Highest)	Hawaiian Airlines (HA)	4.3	Same
2	Aloha Airlines (AQ)	4.5	Same
3	Southwest Airlines (WN)	5.9	Same
4	Frontier Airlines (F9)	8.6	Same
5	Airtran Airways (FL)	11.5	+1
6	Continental Airlines (CO)	12.0	-1
7	Alaska Airlines (AS)	14.7	+4
8	Delta Airlines (DL)	14.9	+1
9	US Airways (US)	16.6	-2
10	Northwest Airlines (NW)	17.9	-2
11	ExpressJet Airlines (XE) <sup>1</sup>	18.2	+3
12	SkyWest Airlines (OO) <sup>2</sup>	18.2	+3
13	United Airlines (UA)	18.7	Same
14	Colgan Air (OH) <sup>3</sup>	24.4	+4
15	JetBlue Airways (B6)	25.0	-5
16	Pinnacle Airlines (9E) <sup>4</sup>	26.2	N/A
17	Mesa Airlines (YV) <sup>5</sup>	28.7	+2
18 (Lowest)	American Airlines (AA) <sup>6</sup>	29.5	-1

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 Colgan Air (OH) operates flights for US Airways Express, United Express, Continental Connection. Now part of Pinnacle Airlines.
- 4 Pinnacle Airlines (9E) operates flights for US Airways Express, United Express, Continental Connection
- 5 Mesa Airlines (YV) operates flights for US Airways Express, United Express, Delta Connection
- 6 Includes American Eagle flights as a wholly owned subsidiary



## **Airports in 2007**

In 2007, passengers experienced degraded performance at 15 of the nation's busiest airports.

**Passengers at 15 of the nations busiest airports experienced increased Passenger Trip Delays**

Denver International and Houston-George Bush International were the only airports from which passengers experienced improved service. The remaining 18 of the nation's busiest airports provided the same level of passenger trip delay service as 2006.

**Passengers at only 2 of the nations busiest airports experienced reduced Passenger Trip Delays**

In 2006, four 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.

**In 2007, passengers at eleven airports experienced average trip delays greater than 20 minutes (up from four airports in 2006)**

### **Ranking of Airports**

The nation's top-ranked airports with lowest Passenger Trip Delay were Honolulu, Chicago-Midway, Salt-Lake City, San Diego and Portland. Passengers at these airports experienced an average Passenger Trip Delay of 10 minutes or less.

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

Passengers at Denver International and Houston-George Bush experienced the largest improvement in Passenger Trip Delay. Denver improved from 30<sup>th</sup> in 2006 to 20<sup>th</sup> in 2007. Houston-George Bush improved from 18<sup>th</sup> in 2006 to 10<sup>th</sup> in 2007.

Passengers at New York-JFK, Minneapolis-St Paul, Dallas-Ft Worth, and New York-LaGuardia experienced the largest degradation in performance. The average passenger trip delay at these airports increased by more than 7 minutes.

In terms of ranking, Minneapolis-St. Paul tumbled 11 positions from 17<sup>th</sup> in 2006 to 28<sup>th</sup> in 2007. Also Cleveland-Hopkins fell from 3<sup>rd</sup> in 2006 to 13<sup>th</sup> in 2007.

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 2 for Annual Passenger Trip Delay at 35 of the nation's busiest airports reported by the Bureau of Transportation Statistics.

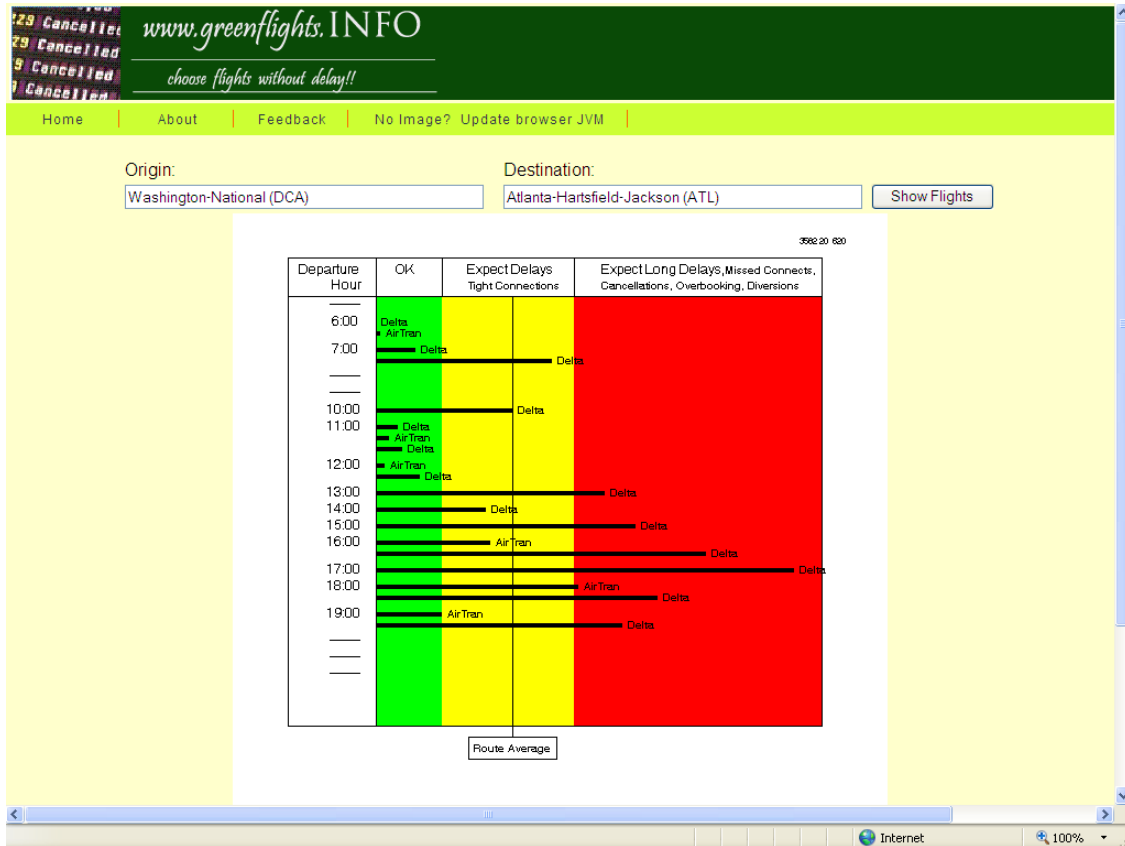
See Appendix - Table 3 for Annual Passenger Trip Delay at 267 of the nation's airports reported by the Bureau of Transportation Statistics.

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

Rank	Airport	Average Trip Delay Experienced by Passenger (minutes)
1 (Highest)	Honolulu-International	7.6
2	Chicago-Midway	9.7
3	Salt Lake City International	10.0
4	San Diego-Lindbergh Field	10.0
5	Portland International	10.0
6	Tampa International	10.3
7	Las Vegas-McCarran	10.3
8	Baltimore-Washington	11.2
9	Los Angeles International	11.2
10	Houston-George Bush	11.4
11	Phoenix-Sky Harbor	11.7
12	Orlando International	11.8
13	Cleveland-Hopkins	12.6
14	Seattle-Tacoma	13.3
15	Fort Lauderdale-Hollywood	13.6
16	St Louis-Lambert	14.0
17	Cincinnati-Northern Kentucky	14.4
18	Atlanta-Hartsfield-Jackson	14.7
19	San Francisco International	15.6
20	Denver International	16.1
21	Memphis International	16.2
22	Charlotte-Midway	17.5
23	Miami International	17.8
24	Pittsburg International	19.3
25	Washington-National	20.3
26	Detroit-Metropolitan Wayne	20.7
27	Philadelphia International	21.1
28	Minneapolis-St Paul	21.6
29	Boston-Logan	23.0
30	Washington-Dulles	24.4
31	Dallas-Ft Worth	26.4
32	Newark International	29.9
33	New York-La Guardia	32.9
34	Chicago-O'Hare	33.9
35 (Lowest)	New York-John F Kennedy	34.3

## Individual Flights and Routes

Expected Passenger Trip Delays for individual flights and routes can be found at the website: [www.GreenFlights.INFO](http://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	Rank and Performance of U.S. Domestic Airlines
Table 2	Rank & Performance of Flights To/From the Nation's Busiest 35 Airports
Table 3	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

**Rank & Performance of U.S. Domestic Airlines\***

**Table 1**

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

Rank	Airline	Average Trip Delay Experienced by Passengers	Change in Rank (+ improved)	Change in Average Trip Delay Experienced by Passenger from 2006 (+ increased delay)
1 (Highest)	Hawaiian Airlines (HA)	4.3	Same	-1.4
2	Aloha Airlines (AQ)	4.5	Same	-1.6
3	Southwest Airlines (WN)	5.9	Same	-0.5
4	Frontier Airlines (F9)	8.6	Same	-1.8
5	Airtran Airways (FL)	11.5	+1	0.5
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6	Continental Airlines (CO)	12.0	-1	1.0
7	Alaska Airlines (AS)	14.7	+4	-1.1
8	Delta Airlines (DL)	14.9	+1	0.7
9	US Airways (US)	16.6	-2	5.2
10	Northwest Airlines (NW)	17.9	-2	4.5
-----				
11	ExpressJet Airlines (XE)	18.2	+3	0.9
12	SkyWest Airlines (OO)	18.2	+3	-1.3
13	United Airlines (UA)	18.7	Same	2.2
14	Colgan Airlines (OH)	24.4	+4	3.3
15	JetBlue Airways (B6)	25.0	-5	10.3
-----				
16	Pinnacle Airlines (9E)	26.2	N/A	0.0
17	Mesa Airlines (YV)	28.7	+2	1.6
18 (Lowest)	American Airlines (AA)	29.5	-1	8.8

**Rank & Performance of Flights To/From Nation's Busiest 35 Airports**  
**Table 2**

2007					2006		
Rank	Airport	Average Trip Delay Exp'd by Paxs (minutes)	Change in Rank (+ improved)	Change in Avg Trip Delay Exp'd by Pax (minutes) (+ improved)	Rank	Airport	Average Trip Delay Exp'd by Pax (minutes)
1 (H)	Honolulu-Int'l	7.6	0	0.0	1 (H)	Honolulu-Int'l	7.5
2	Chicago-Midway	9.7	2	-0.2	2	Portland Int'l	9.0
3	Salt Lake City Int'l	10.0	2	-0.3	3	Cleveland-Hopkins	9.4
4	San Diego-Lindbergh Field	10.0	5	0.5	4	Chicago-Midway	9.5
5	Portland Int'l	10.0	-3	-1.0	5	Salt Lake City Int'l	9.7
6	Tampa Int'l	10.3	1	0.0	6	Orlando Int'l	10.0
7	Las Vegas-McCarran	10.3	4	0.8	7	Tampa Int'l	10.3
8	Baltimore-Washington	11.2	2	-0.4	8	Phoenix-Sky Harbor	10.4
9	Los Angeles Int'l	11.2	4	0.1	9	San Diego-Lindbergh Field	10.5
10	Houston-George Bush	11.4	8	2.7	10	Baltimore-Washington	10.7
11	Phoenix-Sky Harbor	11.7	-3	-1.3	11	Las Vegas-McCarran Fort	11.1
12	Orlando Int'l	11.8	-6	-1.8	12	Lauderdale-Hollywood	11.1
13	Cleveland-Hopkins	12.6	-10	-3.3	13	Los Angeles Int'l	11.2
14	Seattle-Tacoma	13.3	2	-0.5	14	St Louis-Lambert	11.7
15	Fort Lauderdale-Hollywood	13.6	-3	-2.5	15	Cincinnati-Northern Kentucky	12.7
16	St Louis-Lambert	14.0	-2	-2.4	16	Seattle-Tacoma	12.8
17	Cincinnati-Northern Kentucky	14.4	-2	-1.8	17	Minneapolis-St Paul	13.5

18	Atlanta-Hartsfield-Jackson	14.7	7	1.4	18	Houston-George Bush	14.1
19	San Francisco Int'l	15.6	5	0.4	19	Miami Int'l	14.4
20	Denver Int'l	16.1	<b>10</b>	<b>3.2</b>	20	Charlotte-Midway	14.6
21	Memphis Int'l	16.2	1	-0.7	21	Detroit-Metropolitan Wayne	14.9
22	Charlotte-Midway	17.5	-2	-2.9	22	Memphis Int'l	15.5
23	Miami Int'l	17.8	-4	-3.5	23	Pittsburg Int'l	15.6
24	Pittsburg Int'l	19.3	-1	-3.7	24	San Francisco Int'l	16.0
25	Washington-National	20.3	1	-4.2	25	Atlanta-Hartsfield-Jackson	16.0
26	Detroit-Metropolitan Wayne	20.7	-5	-5.8	26	Washington-National	16.1
27	Philadelphia Int'l	21.1	2	-3.3	27	Dallas-Ft Worth	17.7
28	Minneapolis-St Paul	21.6	-11	-8.0	28	Boston-Logan	17.8
29	Boston-Logan	23.0	-1	-5.2	29	Philadelphia Int'l	17.9
30	Washington-Dulles	24.4	1	-4.7	30	Denver Int'l	19.2
31	Dallas-Ft Worth	26.4	-4	-8.7	31	Washington-Dulles	19.7
32	Newark Int'l	29.9	2	-4.0	32	New York-John F Kennedy	23.3
33	New York-La Guardia	32.9	0	-7.4	33	New York-La Guardia	25.6
34	Chicago-O'Hare	33.9	1	-3.9	34	Newark Int'l	25.8
35 (L)	New York-John F Kennedy	34.3	-3	-11.0	35 (L)	Chicago-O'Hare	30.0

**Rank & Performance of Passenger Trip Delays To/From Nation's Airports  
with Scheduled Airline Service**  
**Table 3**

RANK	AIRPORT	AVERAGE TRIP DELAY EXPERIENCED BY PASSENGER
1 (High)	Greenville, MS	1.6
2	Hilo, HI - Island of Hawaii	1.8
3	Pocatello, ID	2.4
4	Toledo, OH	2.9
5	Saint George, UT	3.3
6	Elko, NV	3.6
7	Oxnard/Ventura, CA	3.6
8	Pierre, SD	3.8
9	West Yellowstone, MT	4.7
10	Lewiston, ID	4.8
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11	Santa Maria, CA	5.1
12	El Centro, CA	5.9
13	Alexandria, LA	6.0
14	Ashland, KY/Huntington, WV	6.3
15	Kauai Island/Lihue, HI	6.5
16	Kahului, HI - Island of Maui,	6.5
17	Kona, HI - Island of Hawaii	6.9
18	Islip, NY	6.9
19	Salem, OR	6.9
20	Bellingham, WA	7.4
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21	Helena, MT	7.4
<b>22</b>	<b>Honolulu-International</b>	<b>7.6</b>
23	San Jose, CA	7.7
24	Spokane, WA	7.7
25	Houston - Hobby Int'l	7.8
26	La Palmdale Regional, CA	7.8
27	Albuquerque, NM	7.9
28	Oakland, CA	8.0
29	Twin Falls, ID	8.0
30	Dallas, TX - Love Field	8.3
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31	Ontario, CA	8.4
32	Reno, NV	8.5
33	El Paso, TX	8.5
34	Rockford, IL	8.7
35	Gainesville, FL	8.7
36	Harlingen, TX	8.8
37	Modesto, CA	8.8
38	Sacramento, CA	8.9
39	Boise, ID	8.9
40	Inyokern, CA	9.2
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41	Monroe, LA	9.2
42	Chico, CA	9.3



43	Bethel, AK	9.3
44	Charlottesville, VA	9.4
45	Midland/Odessa, TX	9.4
46	Laredo, TX	9.6
47	Yakutat, AK	9.6
<b>48</b>	<b>Chicago-Midway</b>	<b>9.7</b>
49	Orange County, CA	9.8
<b>50</b>	<b>Salt Lake City International</b>	<b>10.0</b>
<b>51</b>	<b>San Diego-Lindbergh Field</b>	<b>10.0</b>
52	Yakima, WA	10.0
53	Lafayette, LA	10.0
<b>54</b>	<b>Portland International</b>	<b>10.0</b>
55	San Antonio, TX	10.1
56	Tucson, AZ	10.1
57	Burbank, CA	10.2
58	Pasco, WA	10.2
59	Corpus Christi, TX	10.3
60	Redmond, OR	10.3
<b>61</b>	<b>Tampa International</b>	<b>10.3</b>
<b>62</b>	<b>Las Vegas-McCarran</b>	<b>10.3</b>
63	Bristol, VA	10.4
64	Bakersfield, CA	10.4
65	Wilmington, NC	10.5
66	Casper, WY	10.6
67	Glacier Park International, MT	10.9
68	New Orleans, LA	11.0
69	Beaumont/Port Arthur, TX	11.1
<b>70</b>	<b>Baltimore-Washington</b>	<b>11.2</b>
71	Brownsville, TX	11.2
72	Los Angeles International	11.2
73	Panama City, FL	11.2
74	Fort Smith, AR	11.2
<b>75</b>	<b>Houston-George Bush</b>	<b>11.4</b>
76	Atlantic City International, NJ	11.4
77	Melbourne, FL	11.5
78	Missoula, MT	11.5
79	Birmingham, AL	11.6
80	Fresno, CA	11.6
81	Long Beach, CA	11.7
<b>82</b>	<b>Phoenix-Sky Harbor</b>	<b>11.7</b>
83	Austin, TX	11.7
84	Hailey, ID	11.8
<b>85</b>	<b>Orlando International</b>	<b>11.8</b>
86	Henry E Rohlsen, VI	11.9
87	Jackson, MS	12.0
88	Mcallen, TX	12.0
89	Louisville, KY	12.1
90	Ponce, Puerto Rico	12.2
91	College Station, TX	12.2
92	Cordova, AK	12.2

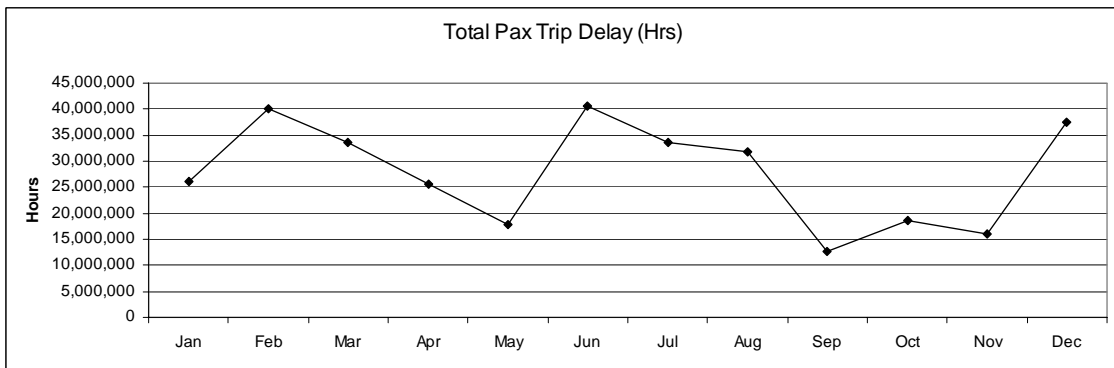
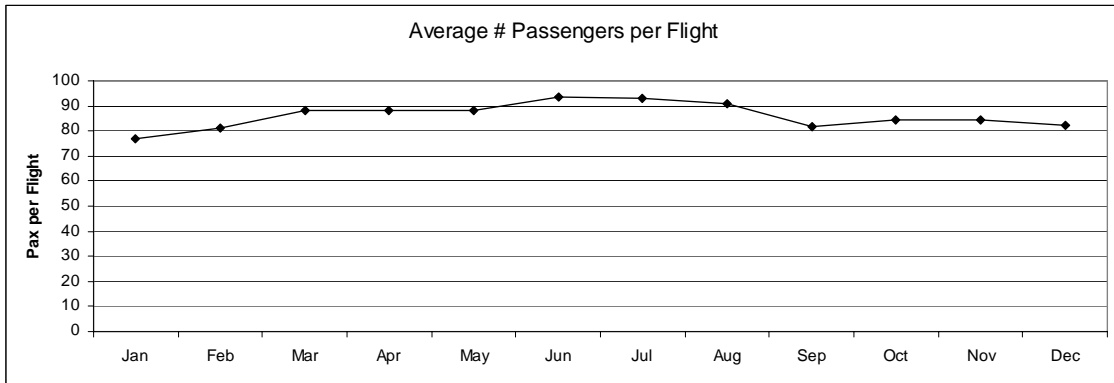
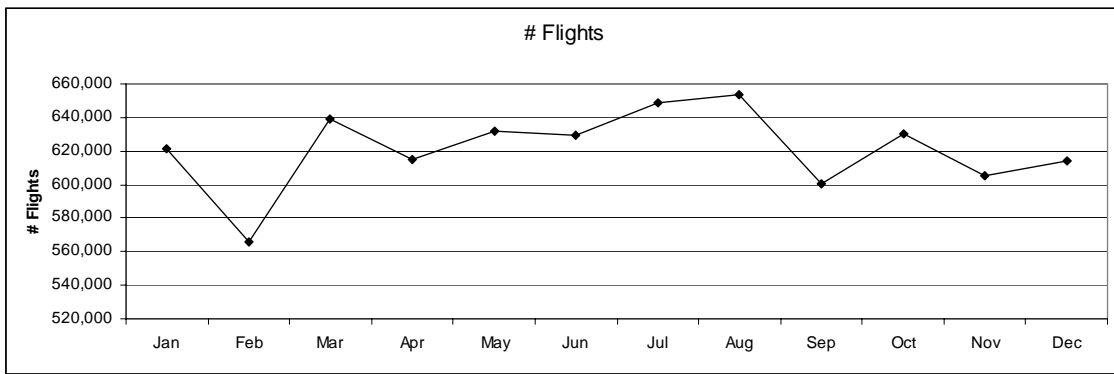
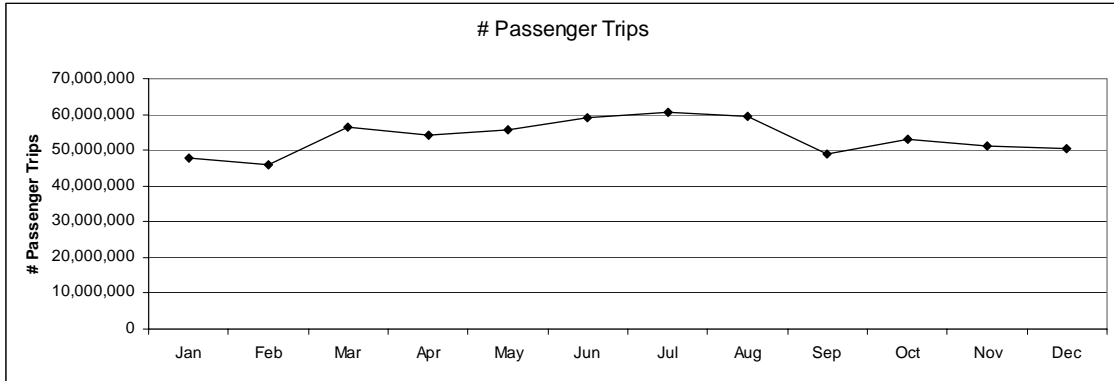
93	Biloxi/Gulfport, MS	12.3
94	Fairbanks, AK	12.3
95	Nashville, TN	12.5
96	Palm Springs, CA	12.5
97	Idaho Falls, ID	12.6
<b>98</b>	<b>Cleveland-Hopkins</b>	<b>12.6</b>
99	Columbus, GA	12.8
100	Santa Barbara, CA	12.8
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101	Butte, MT	13.2
102	Medford, OR	13.2
<b>103</b>	<b>Seattle-Tacoma</b>	<b>13.3</b>
104	Redding, CA	13.4
105	Lake Charles, LA	13.5
106	Grand Forks, ND	13.5
107	Gustavus, AK	13.6
<b>108</b>	<b>Forth Lauderdale-Hollywood</b>	<b>13.6</b>
109	Gray Aaf, TX	13.6
110	Tallahassee, FL	13.6
-----		
111	Evansville, IN	13.7
112	Carmel, CA	13.7
113	Yuma, AZ	13.7
114	Minot, ND	13.7
115	San Luis Obispo, CA	14.0
116	Dillingham, AK	14.0
117	Great Falls, MT	14.0
<b>118</b>	<b>St Louis-Lambert</b>	<b>14.0</b>
119	Pellston, MI	14.1
120	Sitka, AK	14.2
-----		
121	King Salmon, AK	14.2
122	Augusta, GA	14.3
<b>123</b>	<b>Cincinnati-Northern Kentucky</b>	<b>14.4</b>
124	Billings, MT	14.4
125	Fort Myers, FL	14.5
126	Anchorage, AK	14.6
127	Baton Rouge, LA	14.6
<b>128</b>	<b>Atlanta-Hartsfield-Jackson</b>	<b>14.7</b>
129	Colorado Springs, CO	14.7
130	Hampton, VA	14.9
-----		
131	Kansas City, MO	14.9
132	Jacksonville, FL	15.0
133	Sarasota, FL	15.2
134	Newburgh/Stewart Field, NY	15.3
135	Grand Junction, CO	15.3
136	Akron/Canton, OH	15.4
137	Mobile, AL	15.5
<b>138</b>	<b>San Francisco International</b>	<b>15.6</b>
139	Hartford, CT	15.6
140	Nome, AK	15.8
-----		
141	Durham, NC	15.8
142	Columbus, OH	16.0

143	Knoxville, TN	16.0
144	Eugene, OR	16.0
<b>145</b>	<b>Denver International</b>	<b>16.1</b>
146	Little Rock, AR	16.1
147	West Palm Beach, FL	16.1
<b>148</b>	<b>Memphis International</b>	<b>16.2</b>
149	Borinquen, PR	16.3
150	Chattanooga, TN	16.3
-----		
151	Fayetteville, AR - Northwest Arkansas Regional	16.4
152	Bozeman, MT	16.6
153	Myrtle Beach, SC	16.6
154	Omaha, NE	16.6
155	Fargo, ND	16.7
156	Tulsa, OK	16.8
157	Juneau, AK	17.0
158	Arcata, CA	17.0
159	Ketchikan, AK	17.2
160	Savannah, GA	17.4
-----		
161	Daytona Beach, FL	17.5
<b>162</b>	<b>Charlotte-Midway</b>	<b>17.5</b>
163	Manchester, NH	17.6
164	Erie, PA	17.6
165	Bismarck, ND	17.8
<b>166</b>	<b>Miami International</b>	<b>17.8</b>
167	Dayton, OH	17.8
168	Fort Walton Beach, FL	17.9
169	Adak Island, AK	18.0
170	Lubbock, TX	18.0
-----		
171	Crescent City, CA	18.1
172	Oklahoma City, OK	18.1
173	San Juan, Puerto Rico	18.2
174	Montrose, CO	18.2
175	Huntsville, AL	18.2
176	Providence, RI	18.3
177	Greenville/Spartanburg, SC	18.4
178	Flint, MI	18.5
179	Indianapolis, IN	18.6
180	Norfolk, VA	19.1
-----		
181	Gladewater/Kilgore, TX	19.1
182	Kotzebue, AK	19.2
183	Elmira, NY	19.3
<b>184</b>	<b>Pittsburg International</b>	<b>19.3</b>
185	Durango, CO	19.6
186	Lexington, KY	19.8
187	Rapid City, SD	20.0
188	Wichita, KS	20.0
<b>189</b>	<b>Washington-National</b>	<b>20.3</b>
190	Pensacola, FL	20.3
-----		
191	Amarillo, TX	20.4
192	Shreveport, LA	20.4

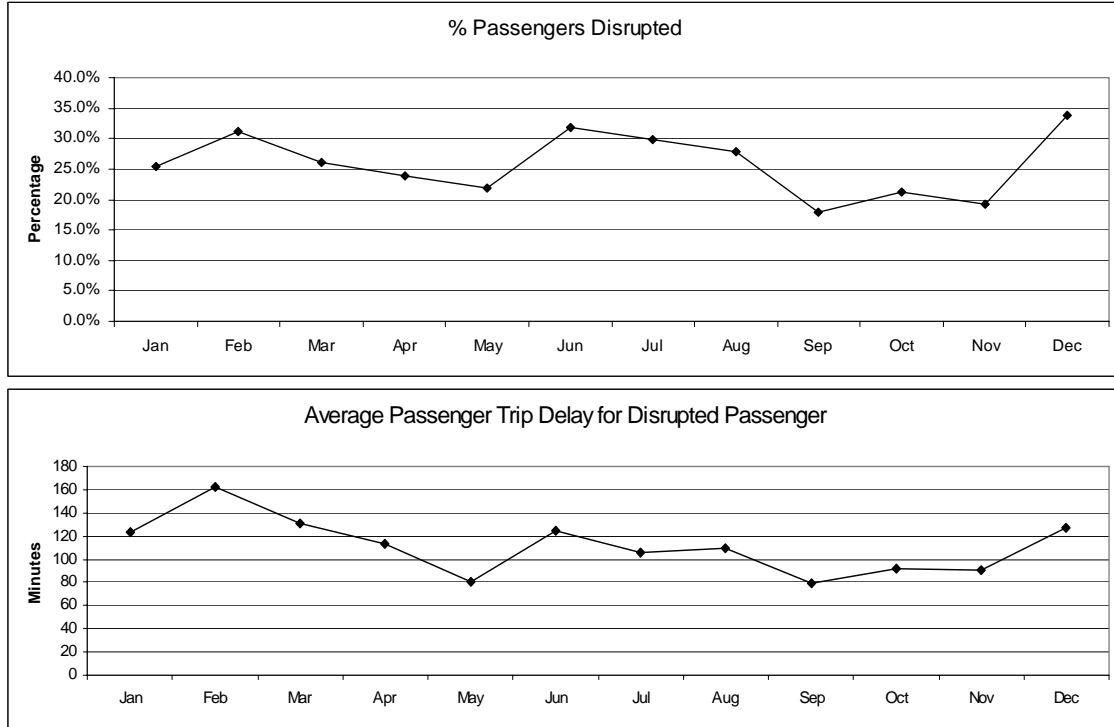
<b>193</b>	<b>Detroit-Metropolitan Wayne</b>	<b>20.7</b>
194	Cody/Yellowstone, WY	21.0
195	Albany, NY	21.0
196	Greensboro, NC	21.0
<b>197</b>	<b>Philadelphia International</b>	<b>21.1</b>
198	Richmond, VA	21.5
<b>199</b>	<b>Minneapolis-St Paul</b>	<b>21.6</b>
200	Hayden, CO	21.6
-----		
201	Barrow, AK	21.7
202	Sioux Falls, SD	21.8
203	Springfield, MO	22.2
204	Prudhoe Bay/Deadhorse, AK	22.4
205	Milwaukee, WI	22.4
206	Scranton, PA	22.6
207	Lincoln, NE	22.8
<b>208</b>	<b>Boston-Logan</b>	<b>23.0</b>
209	Philadelphia, PA - Trenton/Mercer NJ	23.1
210	Buffalo, NY	23.1
-----		
211	Wrangell, AK	23.2
212	Binghamton, NY	23.3
213	Wichita Falls, TX	23.4
214	Charleston, SC	23.6
215	Rochester, NY	23.7
216	La Crosse, WI	23.8
217	Grand Rapids, MI	24.0
218	Syracuse, NY	24.3
<b>219</b>	<b>Washington-Dulles</b>	<b>24.4</b>
220	Jackson Hole, WY	24.4
-----		
221	Abilene, TX	25.0
222	Bay City, MI	25.1
223	Westchester County, NY	25.1
224	Waco, TX	25.2
225	Harrisburg, PA	25.3
226	Montgomery, AL	25.4
227	Madison, WI	25.6
228	Cyril E King, VI	26.2
<b>229</b>	<b>Dallas-Ft Worth</b>	<b>26.4</b>
230	Des Moines, IA	26.5
-----		
231	Traverse City, MI	26.6
232	Columbia, SC	27.4
233	Lansing, MI	27.7
234	Vail, CO - Eagle County Airport	27.7
235	Asheville, NC	27.7
236	Flagstaff, AZ	27.9
237	Kodiak, AK	28.0
238	State College/University Park, PA	28.3
239	Petersburg, AK	28.4
240	Carlsbad, CA	29.5
-----		
241	Moline, IL	29.5
242	Bangor, ME	29.8

<b>243</b>	<b>Newark International</b>	<b>29.9</b>
244	Charleston, WV	30.6
245	Cedar Rapids, IA	30.9
246	Allentown, PA	31.3
247	Fort Wayne, IN	32.0
248	Gunnison, CO	32.1
249	Springfield, IL	32.1
250	South Bend, IN	32.3
-----		
251	Burlington, VT	32.7
<b>252</b>	<b>New York-La Guardia</b>	<b>32.9</b>
253	Peoria, IL	33.1
254	Green Bay, WI	33.2
<b>255</b>	<b>Chicago-O'Hare</b>	<b>33.9</b>
256	Duluth, MN	34.2
257	Appleton, WI	34.2
<b>258</b>	<b>New York-John F Kennedy</b>	<b>34.3</b>
259	Hancock, MI	35.4
260	Kalamazoo, MI	35.7
-----		
261	Rochester, MN	37.0
262	Bloomington, IL	37.7
263	Eau Claire, WI	38.2
264	Stevens Point/Wausau, WI	39.0
265	Roanoke, VA	39.6
266	Sioux City, IA	41.1
267	Portland, ME	42.3
268	Macon, GA	43.9
269	Waterloo, IA	51.9
270	International Falls, MN	53.2
-----		
271	Bemidji, MN	53.3
272	Aspen, CO	56.8
273	Telluride, CO	68.5
274	Rhineland, WI,	76.4
275		
(Low)	Nantucket, MA	78.8

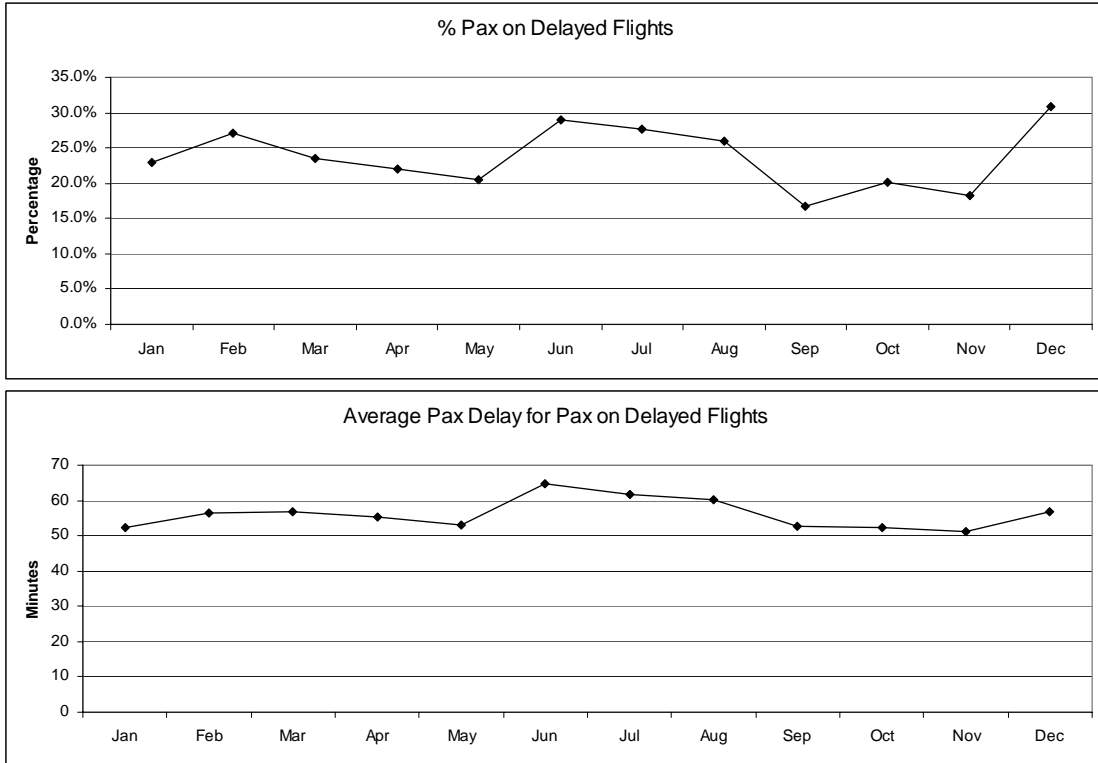
**Monthly Totals 2007**  
**Figure 1**



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

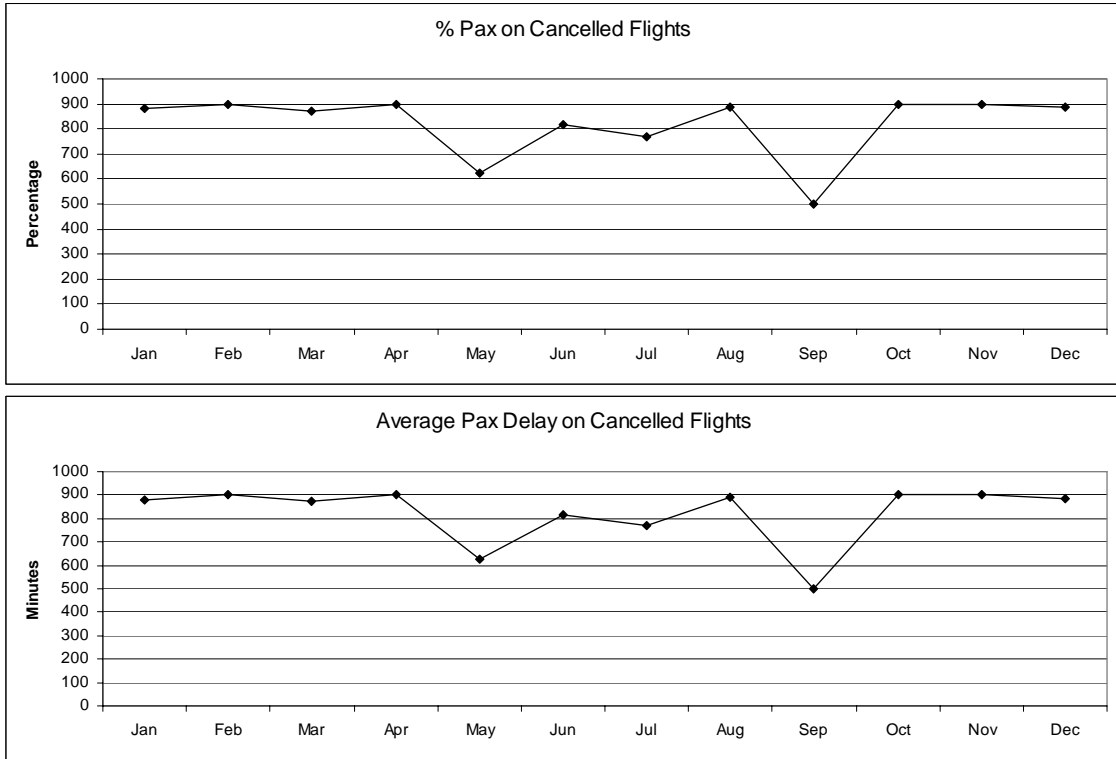


**Monthly Average Passenger Trip Delay for Disrupted Passengers on Delayed Flights**  
**Figure 3**





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



## The Center for Air Transportation Systems Research

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