Purdue University
Purdue e-Pubs

Airline Quality Rating Report

Advanced Aviation Analytics Institute for Research – Center of Research Excellence (A3IR-CORE)

4-1-1996

Airline Quality Rating 1996

Brent D. Bowen
University of Nebraska at Omaha

Dean E. Headley
Wichita State University, dean.headley@wichita.edu

Follow this and additional works at: http://docs.lib.purdue.edu/aqrr

Bowen, Brent D. and Headley, Dean E., "Airline Quality Rating 1996" (1996). *Airline Quality Rating Report.* Paper 9.
http://docs.lib.purdue.edu/aqrr/9

This document has been made available through Purdue e-Pubs, a service of the Purdue University Libraries. Please contact epubs@purdue.edu for additional information.

THE UNO AVIATION MONOGRAPH SERIES

UNOAI Report 96-4

The Airline Quality Rating 1996

Brent D. Bowen
Dean E. Headley

April 1996

UNO
Aviation Institute
University of Nebraska at Omaha
Omaha, NE 68182-0508

ABOUT THE AUTHORS

Brent Bowen is Director and Professor, Aviation Institute, University of Nebraska at Omaha. He holds a Doctorate in Higher Education and Aviation from Oklahoma State University and a Master of Business Administration degree from Oklahoma City University. His Federal Aviation Administration certifications include Airline Transport Pilot, Certified Flight Instructor, Advanced-Instrument Ground Instructor, and Aerospace Education Counselor. Dr. Bowen's research interests focus on aviation applications of marketing in the areas of service quality evaluation, forecasting, and student recruitment in college programs. His professional affiliations include the Aerospace Education Association, Society for Case Research, University Aviation Association, the Nebraska Academy of Science, and the Nebraska Aviation Education Association.

Dean Headley is Associate Professor of Marketing and Barton Fellow, W. Frank Barton School of Business, and Faculty Associate of the National Institute for Aviation Research at Wichita State University. He holds a Doctorate in Marketing from Oklahoma State University, a Master of Business Administration Degree from Wichita State University, and a Master of Public Health Degree from the University of Oklahoma. Dr. Headley's research interests include methodology development for the measurement of service quality, the connection between service quality and consumer behavior, consumer choice processes in service settings, and the effects of marketing activities on consumers and providers of services. Dr. Headley's memberships include the American Marketing Association, Academy for Health Services Marketing, Midwest Business Administration Association, and the Society for Case Research.

Collectively, Dr. Bowen's and Dr. Headley's research on the Airline Quality Rating (AQR) has met with widespread acceptance and acknowledgement. The Airline Quality Rating has been featured on *ABC's Good Morning America, The Cable News Network, The Today Show,* on network news, in *USA Today,* in *Aviation Week and Space Technology,* and in numerous other national and international media. Bowen and Headley have served as invited expert witnesses before the U.S. House of Representatives Committee on Government Operations and have served on multiple occasions as invited speakers and panelists for such groups as the National Academy of Sciences/Transportation Research Board. Resulting from work with the Airline Quality Rating, Bowen and Headley have been recognized with awards from the American Marketing Association, the American Institute of Aeronautics and Astronautics, Embry-Riddle Aeronautical University, the Travel and Transportation Research Association, W. Frank Barton School of Business, and others. The AQR research has been published in the Journal of Aviation/ Aerospace Education and Research, Advances in Marketing, Business Research Methods, as well as other journals, proceedings, text books, and research monographs.

AIRLINE QUALITY RATING 1996

Brent D. Bowen, University of Nebraska at Omaha
Dean E. Headley, Wichita State University

Abstract

The Airline Quality Rating (AQR) was developed and first announced in early 1991 as an objective method of comparing airline performance on combined multiple factors important to consumers. Development history and calculation details for the AQR rating system are detailed in The Airline Quality Rating 1991 issued in April, 1991, by the National Institute for Aviation Research at Wichita State University. This current report, Airline Quality Rating 1996, contains monthly Airline Quality Rating scores for 1995. Additional copies are available by contacting Wichita State University or University of Nebraska at Omaha.

The Airline Quality Rating 1996 is a summary of month-by-month quality ratings for the nine major domestic U.S. airlines operating during 1995. Using the Airline Quality Rating system and monthly performance data for each airline for the calendar year of 1995, individual and comparative ratings are reported. This research monograph contains a brief summary of the AQR methodology, detailed data and charts that track comparative quality for major domestic airlines across the 12 month period of 1995, and industry average results. Also, comparative Airline Quality Rating data for 1991 through 1994 are included to provide a longer term view of quality in the industry.

The Airline Quality Rating (AQR)

The majority of quality ratings available rely on subjective surveys of consumer opinion that are infrequently done. This subjective approach yields a quality rating that is essentially noncomparable from survey to survey for any specific airline. Timeliness of survey based results can be a problem as well in the fast changing airline industry. Before the Airline Quality Rating, there was effectively no consistent method for monitoring the quality of airlines on a timely, objective and comparable basis. With the introduction of the AQR, a multi-factor, weighted average approach became available. This approach had not been used before in the airline industry. The method relies on taking published, publicly available data that characterizes airline performance on critical quality factors important to consumers and combines them into a rating system. The final result is a rating for individual airlines with ratio scale properties that is comparable across airlines and across time.

The Airline Quality Rating (AQR) is a weighted average of 19 factors (see TABLE 1) that have importance to consumers when judging the quality of airline services. Factors included in the rating scale are taken from an initial list of over 80 factors. Factors were screened to meet two basic criteria; 1) a factor must be obtainable from published data sources for each airline; and 2) a factor must have relevance to consumer concerns regarding airline quality. Data used in calculating ratings represent performance aspects (i.e. safety,

on-time performance, financial stability, lost baggage, denied boardings) of airlines that are important to consumers. Many of the factors used are part of the Air Travel Consumer Report maintained by the Department of Transportation.

Final factors and weights were established by surveying 65 airline industry experts regarding their opinion as to what consumers would rate as important (on a scale of 0 to 10) in judging airline quality. Also, each weight and factor was assigned a plus or minus sign to reflect the nature of impact for that factor on a consumer's perception of quality. For instance, the factor that includes on-time performance is included as a positive factor because it is reported in terms of on-time successes, suggesting that a higher number is favorable to consumers. The weight for this factor is high due to the importance most consumers place on this aspect of airline service. Conversely, the factor that includes accidents is included as a negative factor because it is reported in terms of accidents relative to the industry experience, suggesting that a higher number is unfavorable to consumers. Because safety is important to most consumers the weight for this factor is also high. Weights and positive/negative signs are independent of each other. Weights reflect importance of the factor in consumer decision making, while signs reflect the direction of impact that the factor should have on the consumer's rating of airline quality. When all factors, weights and impacts are combined for an airline and averaged, a single continuously scaled value is obtained. This value is comparable across airlines and across time periods.

The Airline Quality Rating methodology allows comparison of major domestic airlines on a regular basis (as often as monthly) using a standard set of quality factors. Unlike other consumer opinion approaches which rely on consumer surveys and subjective opinion, the AQR uses a mathematical formula that takes multiple weighted objective factors into account in arriving at a single rating for an airline. The rating scale is useful because it provides consumers and industry watchers a means for looking at comparative quality for each airline on a timely basis using objective, performance-based data.

TABLE 1

AIRLINE QUALITY RATING FACTORS, WEIGHTS AND IMPACT

	FACTOR	WEIGHT	IMPACT (+/-)
1	Average Age of Fleet	5.85	-
2	Number of Aircraft	4.54	+
3	On-Time	8.63	+
4	Load Factor	6.98	-
5	Pilot Deviations	8.03	-
6	Number of Accidents	8.38	-
7	Frequent Flier Awards	7.35	-
8	Flight Problems[a]	8.05	-
9	Denied Boardings[a]	8.03	-
10	Mishandled Baggage[a]	7.92	-
11	Fares[a]	7.60	-
12	Customer Service[a]	7.20	-
13	Refunds[a]	7.32	-
14	Ticketing/Boarding[a]	7.08	-
15	Advertising[a]	6.82	-
16	Credit[a]	5.94	-
17	Other[a]	7.34	-
18	Financial Stability	6.52	+
19	Average Seat-Mile Cost	4.49	-

[a]Data for these factors is drawn from consumer complaints as registered with the Department of Transportation and published monthly in the Air Travel Consumer Report.

The basic formula for calculating the AQR is:

$$AQR = \frac{- w_1F1 + w_2F2 + w_3F3 +/- \ldots w_{19}F19}{w_1 + w_2 + w_3 + \ldots w_{19}}$$

What the Airline Quality Rating Tells Us about 1995

Since the Airline Quality Rating is comparable across airlines and across time, monthly rating results can be examined both individually and collectively. The pages following these summary comments outline the AQR scores by airline, by month for 1995. For comparison purposes, results for each airline are also displayed for 1991, 1992, 1993 and 1994 where possible. A composite industry average chart that combines the nine airlines tracked is shown. The AQR results for 1995 indicate that:

- Southwest Airlines regained the top rated position, with an improved 1995 average AQR score over 1994. While many of the other large carriers had declining AQR scores, Southwest's improved for 1995. They recorded the best on-time percentage of the major carriers, and were one of only two carriers to have an average on-time percentage over 80% for the year. Southwest traditionally has the highest denied boardings rate and fewest lost bags of the major carriers.

- American Airlines generally slipped to a lower average AQR score in 1995, moving them to the second rated position. Compared to 1994 their 1995 performance was weaker in on-time operations, and, as with many airlines, frequent flyer program awards became more difficult to attain. American did do a better job of getting baggage and passengers together at the end of flights in 1995.

- United Airlines maintained its third position in the 1995 ratings, even though the yearly average shows a decline in performance from 1994. As with many airlines, United had a lower on-time percentage for 1995, and frequent flyer program changes were more demanding. On the positive side, the denied boardings were fewer and they lost fewer bags in 1995 than in 1994. For the year, United was a relatively consistent quality performer, just at lower levels than for 1994.

- Delta Airlines shows a slight upward trend in AQR scores from April, 1995 through November, 1995. Overall, the difference in Delta's average 1995 AQR score compared to their 1994 average score is very little, but positive. Their steady performance helped them maintain their position. Most noticeable were declines in the areas of on-time performance and baggage handling.

- America West had consistent to better AQR scores for 1995. In a year when most airlines continued to have declining AQR scores, this translated into a move from seventh to fifth in overall position. An improved financial stability from late 1994 helped them maintain a consistent to slightly higher AQR score across 1995. America West had fewer denied boardings and fewer lost baggage reports over the year.

- Northwest Airlines slipped to lower performance levels across the year. Unlike 1994 when they posted gains in AQR scores, 1995 saw a general decline in monthly scores. This decline did not effect their position, but brought them closer to other airlines. Northwest has the second highest on-time performance in the industry, and one of only two airlines to top 80% for the year. They have the second worst record with lost baggage in the industry.

- US Air continued a downward trend in AQR scores starting in late 1993. Some improvement was noted in June through July, 1995 but it was not enough to overcome the downward slide for the year. US Air posted the largest decline of all airlines rated for 1995. A bright spot for US Air was a 20% reduction in the number of lost baggage claims for 1995.

- Trans World Airlines was a steady performer in 1995, generally finishing the year at the same AQR score levels as in 1994. TWA has the worst on-time percentage and the worst baggage handling record of the major carriers.

- Continental Airlines showed dramatic gains in 1995, with the most improvement in AQR scores of all rated airlines for 1995 over 1994. Better performance with fewer denied boardings, better on-time performance, a more generous frequent flyer award, and 30% fewer lost bags made a very noticeable difference. Due to the distance between Continental and the other major carriers in 1994, the net effect of the improvements for 1995 are that Continental remained in the lowest rated position among the major carriers. The AQR scores show that Continental Airlines is the most improved airline of the major carriers for 1995.

- For 1995 the overall industry average AQR score remained relatively steady across the 12 month tracking period. The AQR industry average score for 1995 is slightly better than for 1994, suggesting that performance may be turning the corner and following the financial recovery the industry is experiencing.

Observations About the Industry and a Look at the Future

As measured by the Airline Quality Rating, quality increased during 1995 across the industry. Overall quality had diminished annually as measured by the AQR for the previous four consecutive years. This finding is consistent with more casual industry watching. As the decline in quality performance turns, we can note that improved stability is evident across the industry. By looking closely at AQR scores, we see evidence that individual air carrier performance is more stable in a majority of cases. Comparative performance among the major carriers is certainly a key finding of the AQR research methodology and helps demonstrate the competitive environment of the industry.

Financial recovery was the most noticeable aspect of the airline industry in 1995. Most observers would agree that 1995 was a good year financially for the industry. A return to profitability by most carriers is noted. Competition from new industry players is still a concern for the major airlines.

Looking to a broader perspective, there are numerous other significant issues which faced the industry in 1995. Global expansion in passenger and cargo services has become more apparent in our domestic market and our airlines are seeking further global alliances. This is evidenced by code sharing arrangements and our air carriers' support of liberalized bilateral agreements. Airline management has shown more aggressive response to competition from niche carriers.

Looking Ahead....

- Financial turnaround for the industry should continue. With moderate projected growth in passenger volume in both the near and long term future, carriers must position themselves to reap the profits of this growth cycle.

- Continued focus on safety must be maintained. Efforts are very evident that safety has improved across the industry and we must maintain a focus on safety issues at all levels of flight operations.

- Point-to-point service availability will probably be one of the more sweeping system changes of the second half of the '90s. Consumers are demanding this service. Increased competition from startups and more niche marketing will produce routing changes to meet consumer demand. This will certainly result in hub reductions and or changes.

- Stage 3 readiness (noise abatement) is fast approaching a deadline. While airlines are making an effort to meet the requirements, a third of the domestic jet fleet still does not meet the 1999 guidelines. This should affect the demand for new aircraft and related industries outputs.

- Demand has influenced pricing increases and brought some stability to ticket prices. Less discounting will be seen, but continued cost cutting by the airlines will be attempted (i.e. ticket-less travel) that could affect consumers total costs to fly.

- Air traffic control must be modernized with safety and air traffic access issues at the forefront. The DOT and FAA must proceed with or without resolution of the reorganization issue. This is a critical element in keeping the skys safe.

- Quality must become more consistent. The airline that addresses how to consistently define and meet changing customer expectations will have a definite competitive advantage and reap the greatest benefits.

- Potential for a stable period seems possible. Long term labor agreements have been reached, the economy appears healthy, demand for air travel is strong, and supply is readily available in a variety of combinations.

- Free-flight (the ability to fly with most direct routing) must be put into effect. This new approach to commercial aviation routing will save the airlines a tremendous amount of money and will save the flying public substantial time in their travels.

Previous Airline Quality Reports

Bowen, Brent D., Dean E. Headley and Jacqueline R. Luedtke (1991), Airline Quality Rating, National Institute for Aviation Research Report 91-11, Wichita, Kansas.

Bowen, Brent D., and Dean E. Headley (1992), Airline Quality Rating Report 1992, National Institute for Aviation Research Report 92-11, Wichita, Kansas.

Bowen, Brent D., and Dean E. Headley (1993), Airline Quality Rating Report 1993, National Institute for Aviation Research Report 93-11, Wichita, Kansas.

Bowen, Brent D., and Dean E. Headley (1994), Airline Quality Rating Report 1994, National Institute for Aviation Research Report 94-11, Wichita, Kansas.

Bowen, Brent D., and Dean E. Headley (1995), Airline Quality Rating Report 1995, National Institute for Aviation Research Report 95-11, Wichita, Kansas.

For more information contact either:

Dr. Dean E. Headley, Associate Professor
W. Frank Barton School of Business
Wichita State University
304 Clinton Hall
Wichita, KS 67260-0084

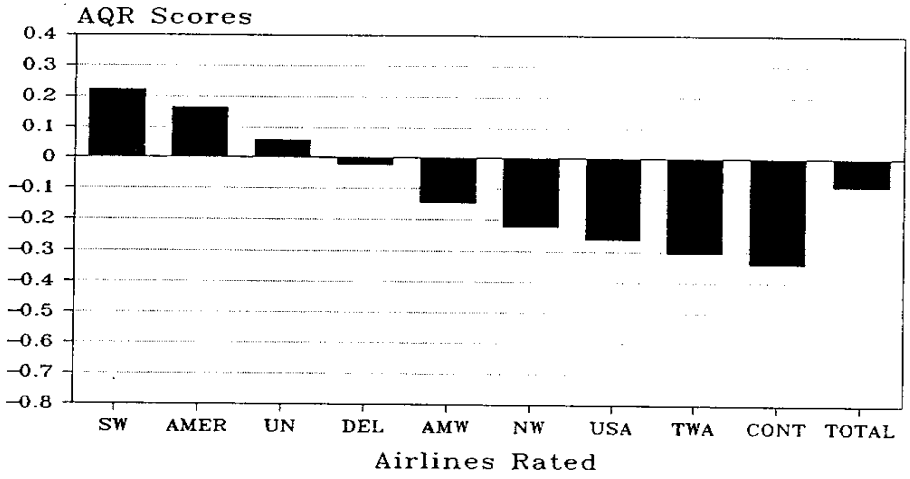
Office: (316) 689-3367
FAX: 316-689-3845
E-mail: headley2@twsuvm.uc.twsu.edu

Dr. Brent D. Bowen, Director
Aviation Institute
University of Nebraska at Omaha
Allwine Hall 422
Omaha, NE 68182-0508

Office: (402) 554-3424
FAX: 402-554-3781
E-mail: unoai@cwis.unomaha.edu

AIRLINE QUALITY RATING

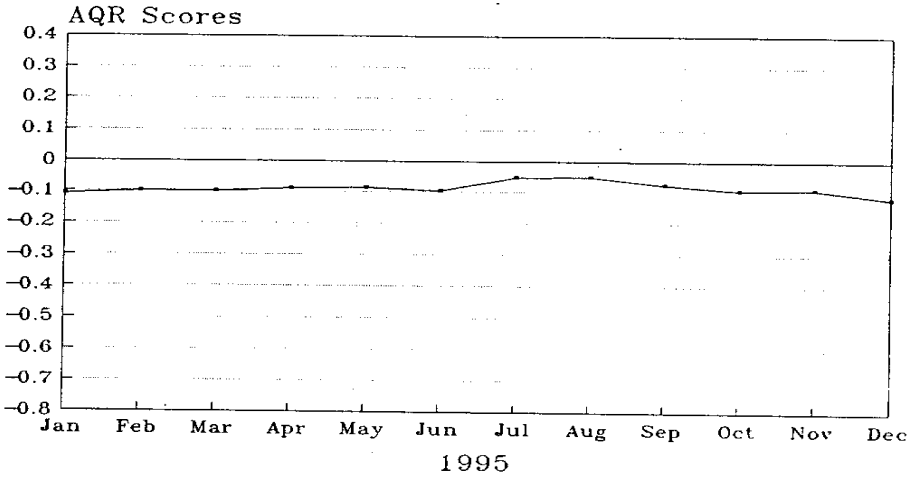
· MEAN AQR SCORES – 1995



Industry Average AQR Scores for U.S. Major Airlines

	1995 Mean AQR Score	1994 Mean AQR Score	1993 Mean AQR Score	1992 Mean AQR Score	1991 Mean AQR Score
Southwest	0.221	0.211	0.252	0.251	0.220
American	0.164	0.225	0.231	0.290	0.323
United	0.058	0.123	0.176	0.214	0.168
Delta	-0.024	-0.031	0.076	0.123	0.193
America West	-0.145	-0.282	-0.294	-0.267	-0.325
Northwest	-0.222	-0.210	-0.247	-0.193	-0.143
US Air	-0.262	-0.148	-0.003	-0.024	0.115
Trans World	-0.303	-0.307	-0.286	-0.398	-0.435
Continental	-0.340	-0.574	-0.540	-0.274	-0.266
Total Average	-0.090	-0.110	-0.070	-0.031	-0.017

AIRLINE QUALITY RATING
ALL AIRLINES

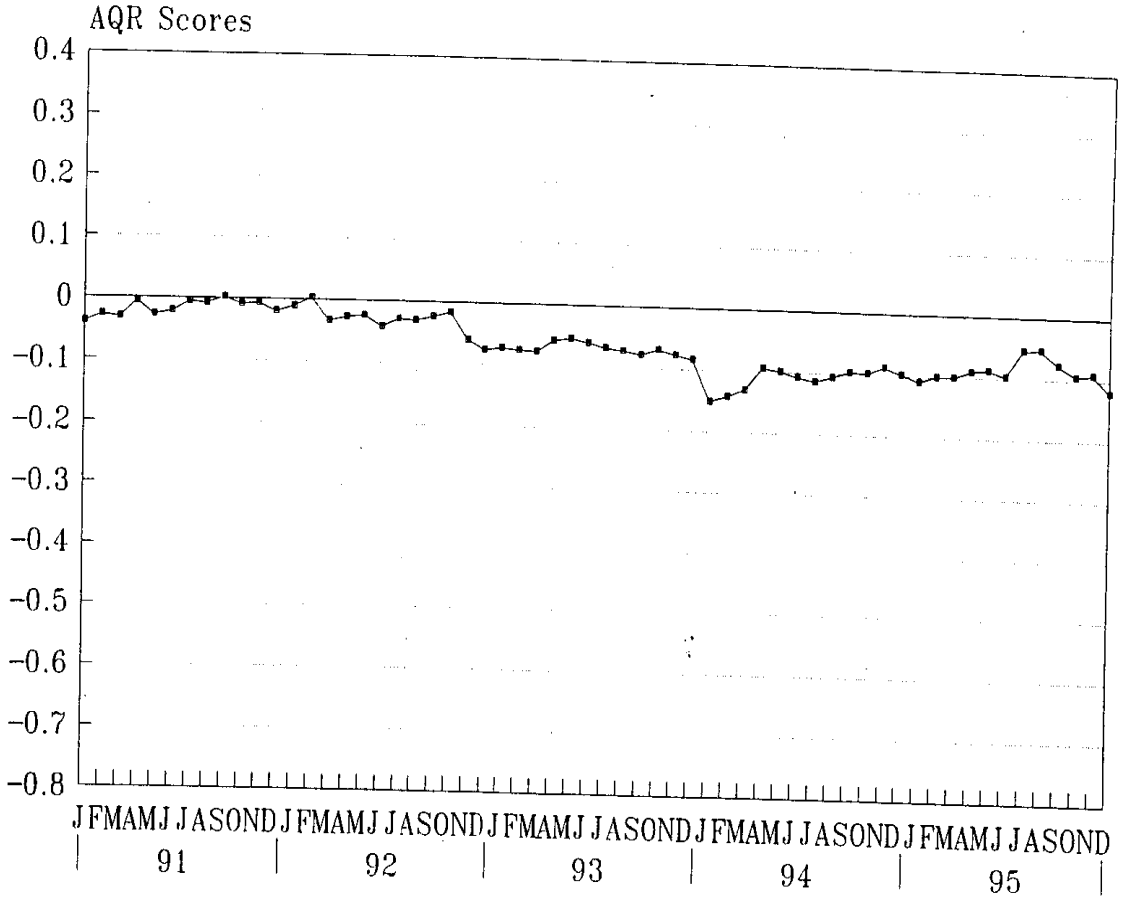


Average Monthly AQR Scores for U.S. Major Airlines

	1995	1994	1993	1992	1991
January	-0.109	-0.151	-0.072	-0.011	-0.040
February	-0.100	-0.142	-0.075	-0.003	-0.028
March	-0.100	-0.130	-0.077	-0.034	-0.032
April	-0.090	-0.094	-0.058	-0.027	-0.006
May	-0.087	-0.099	-0.054	-0.024	-0.027
June	-0.097	-0.108	-0.060	-0.042	-0.021
July	-0.053	-0.114	-0.068	-0.029	-0.006
August	-0.052	-0.106	-0.072	-0.031	-0.008
September	-0.077	-0.097	-0.078	-0.024	0.002
October	-0.093	-0.098	-0.069	-0.016	-0.009
November	-0.091	-0.087	-0.077	-0.060	-0.007
December	-0.119	-0.098	-0.083	-0.076	-0.019
Average	-0.090	-0.110	-0.070	-0.031	-0.017

AIRLINE QUALITY RATING

ALL AIRLINES 1991 - 1995



APPENDIX

Detail of Frequently Cited Airline Performance Factors

Consumer interest remains high regarding such issues as lost baggage and on-time performance. Since these factors are part of the AQR calculations, it seemed useful to provide more complete data on these consumer interest areas. The following data tables and charts provide a detailed look at the performance of each major U.S. airline for the 12 months of 1995 regarding lost baggage, on-time performance, denied boardings, and consumer complaints. Data were drawn from the Department of Transportation monthly Air Travel Consumer Report.

We offer some interesting facts in areas of concern to most consumers (on-time, lost bags, denied boardings, consumer complaints, and safety). This information is drawn from a variety of sources and can be useful in helping the less familiar consumer grasp a memorable perspective on issues in the airline industry.

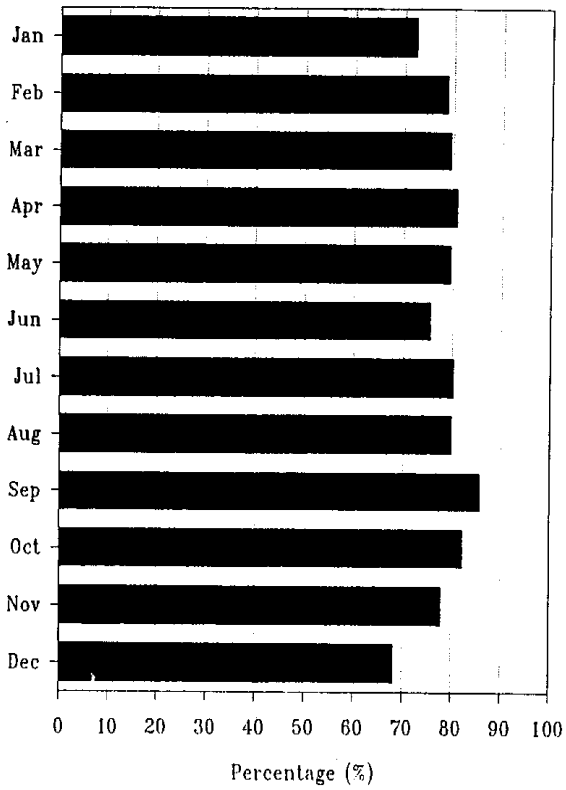
The final pages of this report restate the Airline Quality Rating factor definitions. At this five years juncture it seems useful that the factor definitions be restated for best clarity.

1995 On Time Percentage by Month for U.S. Major Airlines

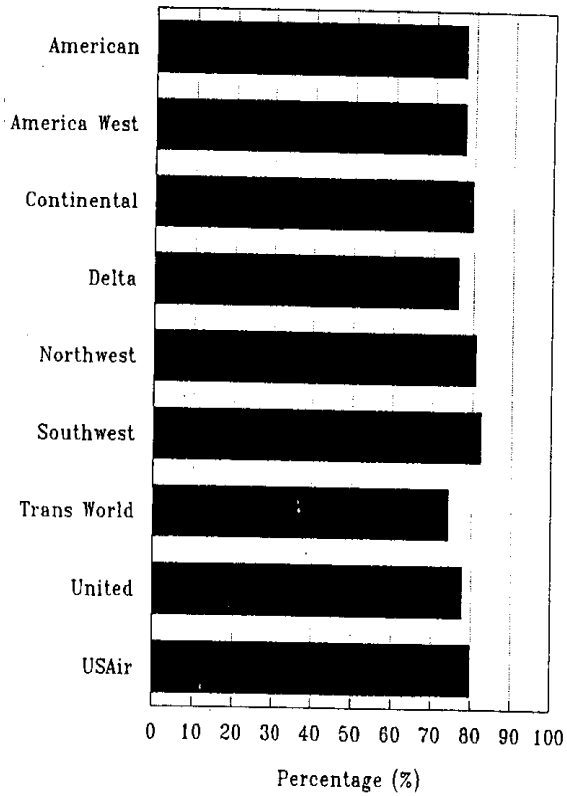
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Airline Average
American	.727	.772	.705	.762	.768	.785	.795	.802	.860	.847	.813	.678	.775
America West	.713	.771	.770	.784	.808	.758	.784	.787	.854	.805	.761	.717	.776
Continental	.713	.795	.831	.839	.782	.641	.804	.849	.885	.853	.812	.754	.795
Delta	.789	.778	.804	.803	.790	.743	.780	.772	.808	.752	.725	.597	.762
Northwest	.774	.820	.810	.830	.834	.784	.797	.761	.865	.860	.815	.738	.807
Southwest	.713	.818	.810	.825	.836	.829	.870	.860	.894	.870	.817	.725	.823
Trans World	.576	.757	.818	.765	.681	.729	.804	.756	.840	.810	.770	.607	.743
United	.745	.810	.784	.832	.815	.754	.784	.778	.842	.792	.740	.651	.777
USAir	.758	.769	.820	.838	.849	.770	.810	.824	.872	.824	.771	.671	.798
Monthly Avg.	.723	.788	.795	.809	.796	.755	.803	.799	.858	.824	.780	.682	.786

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

1995 On Time Percentage
Monthly Averages for Major Airlines



On Time Percentage
1995 Averages for Major Airlines



1995 Mishandled Baggage* by Month for U.S. Major Airlines

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Airline Average
American	58.2	49.2	49.3	47.2	43.9	51.1	49.4	50.5	42.5	42.7	49.5	76.8	50.8
America West	58.8	48.6	54.7	47.8	45.8	48.5	51.7	51.3	34.9	35.2	55.5	58.7	48.2
Continental	83.5	52.0	51.9	42.2	40.0	44.9	44.0	40.8	33.9	34.4	37.8	60.4	46.9
Delta	62.5	52.8	49.7	49.7	48.1	50.1	53.2	52.9	46.9	47.6	51.2	70.3	52.8
Northwest	74.4	63.0	60.9	52.5	51.2	63.1	73.9	69.5	47.3	48.2	59.1	95.2	63.3
Southwest	52.3	39.2	40.6	37.4	37.9	42.0	42.8	43.2	34.1	37.0	41.4	63.5	42.6
Trans World	111.7	54.9	47.9	49.1	63.1	56.8	50.7	58.5	45.7	49.5	57.8	124.0	63.7
United	67.0	55.7	59.7	46.3	44.3	46.4	43.4	43.0	38.5	48.2	56.3	84.5	52.3
USAir	58.9	52.3	51.0	42.6	39.6	46.8	49.7	46.6	36.5	44.1	46.0	77.1	49.0
Monthly Avg.	65.7	51.9	51.7	46.0	44.8	49.4	50.6	50.0	40.6	44.0	50.1	77.3	51.7

* Figures shown are per 10,000 passengers.

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

1994 Denied Boardings* by Quarter for U.S. Major Airlines

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1994 Average
American	0.637	0.261	0.351	0.492	0.435
America West	2.192	2.418	1.972	1.898	2.120
Continental	3.418	1.355	1.346	1.337	1.864
Delta	0.713	0.655	0.862	0.443	0.668
Northwest	1.103	0.662	0.314	0.307	0.597
Southwest	3.479	3.949	3.580	4.104	3.778
Trans World	2.707	0.896	1.250	0.493	1.337
United	0.585	0.347	0.670	0.420	0.506
USAir	1.763	1.394	0.722	1.074	1.238

* Figures shown are per 10,000 passengers.

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

1995 Denied Boardings* by Quarter for U.S. Major Airlines

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1995 Average
American	0.530	0.350	0.450	0.470	0.450
America West	2.590	2.520	2.230	2.310	2.280
Continental	1.060	0.730	0.530	0.360	0.670
Delta	0.780	0.830	0.830	0.760	0.800
Northwest	0.160	0.340	0.400	0.460	0.340
Southwest	3.040	3.040	3.480	4.130	3.430
Trans World	0.680	0.680	1.100	0.810	0.820
United	0.390	0.260	0.430	0.570	0.410
USAir	1.720	1.630	0.660	1.350	1.350
Industry Average	1.060	1.004	0.984	1.150	1.050

* Figures shown are per 10,000 passengers.

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

1995 Total Complaints* by Month for U.S. Major Airlines

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Airline Average
American	0.70	0.54	0.96	0.48	0.74	0.86	0.47	0.49	0.42	0.71	0.47	0.68	0.62
America West	1.03	1.70	0.81	0.50	1.18	1.39	1.03	0.82	1.49	0.77	0.36	0.36	0.94
Continental	1.82	1.82	1.84	0.84	1.16	0.94	0.91	0.97	0.93	0.42	0.39	0.48	1.04
Delta	0.51	0.39	0.71	0.33	0.85	0.73	0.53	0.84	0.72	0.48	0.31	0.50	0.58
Northwest	0.36	0.41	0.50	0.31	0.62	0.62	0.69	0.52	0.55	0.79	0.25	0.55	0.52
Southwest	0.36	0.34	0.21	0.12	0.19	0.31	0.13	0.28	0.25	0.26	0.10	0.07	0.21
Trans World	1.58	1.46	1.87	1.34	1.31	1.49	1.12	1.69	1.83	0.96	0.79	0.67	1.34
United	0.93	0.76	1.31	0.47	0.86	0.74	0.69	0.65	0.63	0.71	0.75	0.58	0.76
USAir	0.83	0.52	1.18	0.46	0.61	0.98	0.56	0.50	0.45	0.94	0.37	0.53	0.66
Monthly Avg.	0.79	0.69	0.97	0.45	0.76	0.80	0.59	0.66	0.65	0.64	0.41	0.50	0.66

* Figures shown are per 100,000 passengers.

Source: *Air Travel Consumer Report*, U.S. Department of Transportation, Office of Aviation Enforcement and Proceedings.

Some Interesting Facts About U.S. Airlines

Approximately 460 million people boarded one of the nine major U.S. domestic carriers in 1995. On average, these carriers have about 14,780 flights per month. This translates to about 1.3 million people flying on the major carriers on any given day. On average then, about 52,500 people are in the air over the U.S. at any given hour of the day or night when just the major carriers are considered. When all domestic carriers are considered, these numbers are 548 million people boarded, 1.5 million passengers flying per day and approximately 62,500 people in the air at any given hour of the day or night for the entire domestic system. There were 82 million air traffic operations in 1995. This translates to one air traffic operation about every three seconds.

Lost Baggage:
Your chance of having a bag lost depends to some extent on how you use the baggage system, but about 1 out of every 200 bags that are checked are reported lost.

The months when most baggage was reported lost in 1995 - January and December.
The months when the fewest bags are reported lost in 1995 - April and May, September and October.

Airlines that lost bags most often in 1995 - Trans World and Northwest.
Airlines that lost the fewest bags in 1995 - Southwest, Continental, and US Air.

On-Time Performance:
Leaving and arriving on-time are affected by many uncontrollable factors. When just the more controllable elements are considered, the U.S. major carriers maintained an 78.5% on-time record for 1995. This was slightly worse than the 81.5% for 1994.

Worst on-time performance for 1995 - Trans World (74.3%) and Delta (76.2%).
The best on-time performers in 1995 - Southwest (82.3%) and Northwest (80.7%).

The most troublesome months to fly in 1995 (ie. lowest on-time performance for the industry) - January (72.3%), June (75.5%), and December (68.2%).
The most successful on-time months for the industry in 1995 - September (85.8%) and October (82.4%).

Being Bumped From a Flight (Denied Boardings):
Across the industry, about one passenger per 10,000 boardings was bumped from their flight involuntarily in 1995.

Airlines most likely to bump people in 1995 - Southwest, America West, and US Air.
Airlines least likely to bump a passenger in 1995 - Northwest, United, and American.

Airline Safety:
In 1995, major airlines experienced 19 accidents with 3 deaths. In 1994, this same group of airlines experienced 20 accidents and 239 deaths. For 1993, major airlines experienced 22 accidents and 1 death. As can be seen the year to year statistics vary greatly.

In 1995, only 1 in about 150 million passengers died in a commercial airliner accident. Over the past ten years, the chance of being killed while flying was approximately 1 in 3.0 million. In 1994, a very bad year for fatal accidents, only 1 in about 1.7 million passengers died in a commercial airliner accident.

In 1995, it was 230 times more likely that you would be struck by lightning than die in an airplane crash (1 in approximately 650,000 Americans are struck each year, with an average of 93 deaths per year).

Considering a 15 year average of miles driven and miles flown, driving in a car is 35 times more deadly than flying in a commercial jet. In a typical three month period, more people die on our highways than have died in all the accidents in the history of U.S. commercial aviation.

Since 1980, an average of 105 people have died each year from airline accidents. Compare this to an average for the same period of 12,000 annual deaths from falling (ie. stairways, bathtubs, icy sidewalks, etc.); 5,400 deaths annually from drowning; 4,500 deaths annually from poisoning; and more than 4,800 deaths annually from fire.

Airline Quality Rating Factor Overview

Since the original publication of the Airline Quality Rating in the spring of 1991, the factor definitions, and weights have been held constant. With this 1996 report, we have a five year history of monthly AQR scores for each of the major airlines during that time. For those that might have questions about how the individual factor data and calculations are achieved, factor definitions are restated on the following pages. Factor weights are noted earlier in this report in TABLE 1.

FACTOR 1 AVERAGE AGE OF FLEET

Most currently available public data as to years of service is gathered for the various aircraft types operated by each major airline. An average age for the fleet for each airline is calculated for the year. The average age for an airline is converted to a percentage, using the industry annual average age as the denominator and the individual airline annual average age as the numerator. This percentage is used for each monthly calculation of AQR scores across the 12 month period.

FACTOR 2 NUMBER OF AIRCRAFT (SIZE OF FLEET)

Most currently available public data is gathered regarding total number of jet aircraft operated by each major carrier and for the total domestic jet fleet. The number of jet aircraft for each airline is converted to a percentage of the total domestic jet fleet, using the total jet fleet of all major carriers as the denominator and the individual airlines jet fleet size as the numerator. This percentage is used for each monthly calculation of AQR scores across the 12 month period.

FACTOR 3 ON-TIME PERFORMANCE

Regularly published data regarding on-time performance is obtained from the U.S. Department of Transportation's *Air Travel Consumer Report*. According to DOT, a flight is counted "on time" if it is within 15 minutes of scheduled arrival or departure time shown in the carriers' Computerized Reservations Systems. Delays caused by mechanical problems are counted as of January 1, 1995. Canceled and diverted operations are counted as late. The AQR calculations use the percentage of flights on time for each airline for each month.

FACTOR 4 LOAD FACTOR

This factor is an aspect of the efficiency of an airline in its bookings, routes, time schedules, and competitive structure. Data is reported as the percentage of seats filled per airline per month.

FACTOR 5 PILOT DEVIATIONS

Data regarding pilot deviations can be obtained from the National Transportation Safety Board (NTSB) and the Federal Aviation Administration (FAA) Pilot Deviation Subsystem. According to the NTSB, a pilot deviation is defined as an action of a pilot that may result in violation of a Federal Aviation Regulation or a North American Aerospace Air Defense Identification Zone tolerance. This data is reported for each carrier as the total number of pilot deviations for the year. The AQR uses a figure in each monthly calculation that reflects an equal proportion of total annual deviations reported per 10,000 hours flown for each airline.

FACTOR 6 NUMBER OF ACCIDENTS

Published data regarding number of accidents can be obtained from the National Transportation Safety Board (NTSB). According to the NTSB, an accident is defined as an occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight and until such time as all such persons have disembarked, and in which any person suffers death or serious injury, or in which the aircraft receives substantial damage. Data are reported each year by the total number of accidents per hours flown per carrier. The AQR uses the accidents reported for each airline each month as a percentage of total accidents for the year for all airlines included in the ratings.

FACTOR 7 FREQUENT FLIER AWARDS

Data regarding frequent flier programs and award levels can be obtained from each airline and, periodically, from newspaper and/or magazine articles. The AQR calculates the factor by combining the number of miles required to receive two round-trip domestic coach fares (ie. 25,000 + 25,000 = 50,000). This total is converted by dividing by 10,000 (ie. 50,000 ÷ 10,000 = 5). This number is used for each monthly calculation. For most airlines the mileage required is very similar and, therefore, has little differential impact. The factor carries a negative impact for the weighting number, suggesting that those airlines with higher mileage requirements for frequent flyer awards may be perceived as less desirable by a consumer.

FACTOR 8 FLIGHT PROBLEMS (CONSUMER COMPLAINTS)

Regularly published data regarding consumer complaints about delays can be obtained from the U.S. Department of Transportation's *Air Travel Consumer Report*. According to DOT, a flight is listed as a flight problem if it is delayed from schedule, whether planned or unplanned. Data is available by the total number of consumer complaints pertaining to delays, cancellations, and missed connections against each airline per month. The AQR uses the total delays reported for each airline each month as a percentage of total delays for all airlines included in the ratings.

FACTOR 9 DENIED BOARDINGS

This factor includes involuntary denied boardings. Data regarding denied boardings can be obtained from the U.S. Department of Transportation's *Air Travel Consumer Report*. Data includes the number of passengers who are involuntarily denied boarding and the total number of passengers boarded by month. The AQR uses the ratio of involuntary denied boardings per 10,000 passengers.

FACTOR 10 MISHANDLED BAGGAGE REPORTS

Regularly published data regarding consumer complaints about mishandled baggage can be obtained from the U.S. Department of Transportation's *Air Travel Consumer Report*. According to DOT, consumer complaints about mishandled baggage include claims for lost, damaged or delayed baggage, charges for excess baggage, carry-on problems, and difficulties with airline claim procedure. Data is reported by carriers as to the rate of mishandled baggage reports per 1000 passengers and for the industry. The AQR ratio is based on the total number of reports each carrier received from passengers concerning lost, damaged, delayed or pilfered baggage per 10,000 passengers.

FACTOR 11 FARES (CONSUMER COMPLAINTS)

Published data regarding consumer complaints about fares can be obtained from the U.S. Department of Transportation's *Air Travel Consumer Report*. According to DOT, consumer complaints about fares include incorrect or incomplete information about fares, discount fare conditions and availability, overcharges, fare increases and level of fares in general. Data is reported by the number of consumer complaints pertaining to fares and by the number of complaints regarding fares against each airline per month. The AQR uses the complaints reported for each airline as a percentage of all complaints in the category regarding fares for each monthly period.

FACTOR 12 CUSTOMER SERVICE (CONSUMER COMPLAINTS)

Monthly data regarding the number of consumer complaints about customer service can be obtained from the U.S. Department of Transportation's *Air Travel Consumer Report*. This factor includes complaints about rude or unhelpful employees, inadequate meals or cabin service, and treatment of delayed passengers. This data is reported by the total number of complaints received per month regarding customer service by the DOT for all airlines and the number against each airline per month. The AQR uses a percentage of customer service complaints reported per airline based on the total complaints regarding customer service for the month for all the major airlines.

FACTOR 13 REFUNDS (CONSUMER COMPLAINTS)

This factor includes customer complaints about problems in obtaining refunds for unused or lost tickets or fare adjustments. Data is reported by total number of complaints received per month regarding consumer complaints concerning refunds by the DOT for all airlines and the number against each airline per month. The AQR uses a percentage of refund complaints for each airline based on the total refund complaints for all airlines included.

FACTOR 14 TICKETING/BOARDING (CONSUMER COMPLAINTS)

This factor includes airline or travel agent mistakes in reservations and ticketing; problems in making reservations and obtaining tickets due to busy telephone lines or waiting in line, or delays in mailing tickets; problems boarding the aircraft (except oversales); and complaints received regarding ticketing/boarding. The AQR uses the percentage of ticketing/boarding complaints for each airline based on the total ticketing/boarding complaints for all airlines included.

FACTOR 15 ADVERTISING (CONSUMER COMPLAINTS)

These are complaints concerning advertising that is unfair, misleading or offensive to consumers. This data is reported by the total number of complaints received per month regarding complaints concerning advertising by the DOT for all airlines and the number against each airline per month. The AQR uses the percentage of advertising complaints for each airline as based on the total advertising complaints for the airlines included.

FACTOR 16 CREDIT (CONSUMER COMPLAINTS)

These are problems concerning denial of credit, interest or late payment charges, incorrect billing, or incorrect credit reports on airline-issued credit. This data is reported by the total number of complaints received per month regarding complaints concerning credit by the DOT for all airlines and the number against each airline per month. AQR uses the percentage of credit complaints for each airline as based on the total credit complaints for the airlines included.

FACTOR 17 OTHER (CONSUMER COMPLAINTS)

Data regarding consumer complaints about cargo problems, security, airport facilities, claims for bodily injury, frequent flyer programs, and other problems not classified above can be obtained from the U.S. Department of Transportation's *Air Travel Consumer Report*. This data is reported by the total number of complaints received per month regarding tours, smoking, and other consumer complaints by the DOT for all airlines and the number against each airline per month. AQR uses the percentage of other complaints for each airline as a percentage of total other complaints for all airlines included.

FACTOR 18 FINANCIAL STABILITY

Data regarding the financial stability of an airline can be obtained from each airline's corporate bond rating by Moody's Investment Services. Including this indicator of financial stability responds to the consumer's need to trust that an airline will be available to render the service which was purchased. The AQR assigns a numerical value to each of the potential 19 rating levels with Aaa = 19 to C = 1.

FACTOR 19 AVERAGE SEAT-MILE COST

Average seat-mile cost for an airline is an indication of the operating expenses per available passenger seat mile. This data is included in the AQR as the amount it costs (in cents) the carrier for each seat per each mile.