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Brent D. Bowen
University of Nebraska at Omaha

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

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NIAR Report 93-11

The Airline Quality Report 1993

**Brent D. Bowen
Dean E. Headley**

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NIAR
National Institute for Aviation Research

**The Wichita State University
Wichita, Kansas 67260**

ABOUT THE AUTHORS

Brent Bowen is Director of the Aviation Institute, University of Nebraska at Omaha. He holds a Doctorate in Aviation Sciences from Oklahoma State University and a Master of Business Administration Degree from Oklahoma City University. His FAA certifications include Airline Transport Pilot, Certified Flight Instructor, and Advanced Ground Instructor. Dr. Bowen's research interests include measurement of service quality in aviation service firms, faculty demographics in collegiate aviation programs, aviation education at the university level and other aspects of aviation. His professional affiliations include the Aerospace Education Association, American Institute of Aeronautics/ Astronautics, Clearing House for Research on Faculty, Midwest Society for Case Research, National Intercollegiate Flying Association, Nebraska Aviation Education Association, Transportation Research Board of the National Academy of Science, and University Aviation Association.

Dean Headley is Assistant Professor of Marketing, 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 Midwest Society for Case Research.

AIRLINE QUALITY RATING 1993

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

Abstract

The Airline Quality Rating 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 AQR rating system are detailed in The Airline Quality Rating (NIAR Report 91-11) issued in April, 1991, by the National Institute for Aviation Research at Wichita State University. A full reporting of the 12 month period of 1991 Airline Quality Rating scores is available in Airline Quality Report 1992 (NIAR Report 92-11) also available by contacting Wichita State University.

The Airline Quality Rating 1993 (NIAR Report 93-11) is a summary of month-by-month quality ratings for the nine major domestic U.S. airlines operating during 1992. Using the Airline Quality Rating (AQR) system and monthly performance data for each airline for the calendar year of 1992, individual and comparative ratings are reported. This research monograph, NIAR Report 93-11, 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 1992, and results reflecting industry averages. Also, comparative Airline Quality Rating data for 1991 is 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 (NIAR Report 91-11, April, 1991) 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 readily 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 generally 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 per hours flown, 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 numerical 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	-

^aData 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:

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

What the Airline Quality Rating Tells Us for 1992

Since the Airline Quality Rating (AQR) 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 1992. For comparison purposes, results for each airline are also displayed for 1991 and 1992 on a single chart. A composite industry average chart that combines the nine airlines tracked for 1992 is shown, as well as an industry average tracking for 1991 and 1992. The AQR results for 1992, when compared with results for 1991, indicate that:

- The highest rated airline was consistently American Airlines. Recovery from a slump in late 1991 into early 1992 was seen, but AQR scores began to fall off again by mid 1992 and showed erratic monthly scores in late 1992. American finished the year with a lower AQR score than in 1991. Generally, American had lower monthly AQR scores in 1992 than in 1991, but they remained the highest of the airlines rated.
- Southwest Airlines maintained a consistently higher AQR score in 1992 than in 1991 until late in 1992. November and December scores fell off noticeably and dropped below 1991 score levels. Even with this drop late in the year, 1992 was a more stable year for Southwest's AQR scores than was 1991.
- United and Delta switched positions in this latest AQR reporting period. After recovering in mid-1991 to a stable level, United maintained this level throughout 1992. A slight downturn in late 1992 is noted, but did not effect the final position for the airline among those rated.
- Delta Airlines maintained a consistent AQR score in 1991 and in 1992. The switch in positions between United and Delta came early in 1992 and seems due more to United's improvement as to Delta's change in scores. Delta maintained a consistent but lower AQR score across the months in 1992.
- USAir started 1991 with inconsistent AQR scores, but by April established and maintained a consistent rating score that kept them in the middle of the nine airline group rated for most of 1991. This consistent AQR score was maintained into early 1992 until March when a drop was noted. This lower level was maintained for the remainder of 1992.
- Northwest Airlines started 1991 with erratic AQR scores that kept moving downward until stabilizing in mid-year. This same level was maintained into mid 1992 when another general downward trend is seen that runs through the end of the year.

- America West switched positions with Continental, and moved into the seventh place position among the nine airlines rated. Consistent AQR scores for late 1991 were maintained and improved upon throughout 1992. America West has consistently higher AQR scores in 1992 than for the same months in 1991.
- Consistency was the hallmark of Continental Airlines in 1991. This consistency changed in 1992 with more volatile, and generally lower, AQR scores than in 1991. A noticeable downturn in December 1992 leaves Continental finishing the year on a less positive note.
- The lowest rated airline was consistently Trans World Airlines. Improvements seen in late 1991 were continued into early 1992. The steady scores seen in early 1992 took a noticeable positive jump in mid 1992 (July thru October). Late in 1992 (November and December), AQR scores returned to their previous lower levels. TWA had some bright months, but slipped back near the end of the recent reporting period.
- As an industry, the average AQR score indicates that performance was best during the early months of 1992. From mid-1992, the monthly industry average AQR score was consistently lower for 1992 than for the same month in 1991. This is reflective of the general increasing stress on the industry from economic, international, regulatory, competitive, and consumer elements.

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.

For more information or copies contact:

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

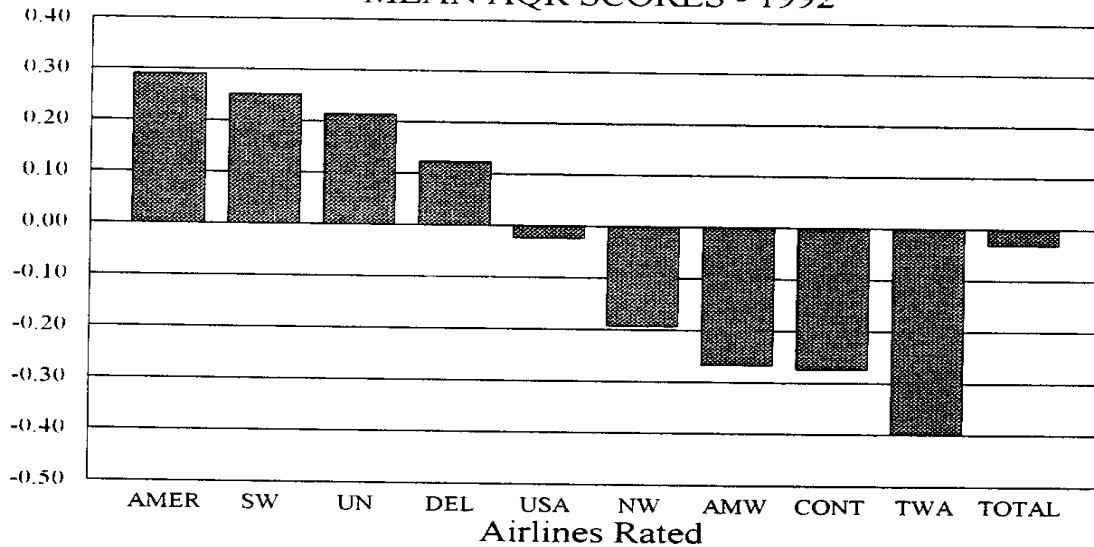
Dr. Dean E. Headley, Assistant Professor
W. Frank Barton School of Business
Wichita State University
304 Clinton Hall Box 88
Wichita, KS 67260-0088

Office: (402) 554-3424
FAX: 402-554-3781

Office: (316) 689-3367
FAX: 316-689-3845

AIRLINE QUALITY RATING

MEAN AQR SCORES - 1992

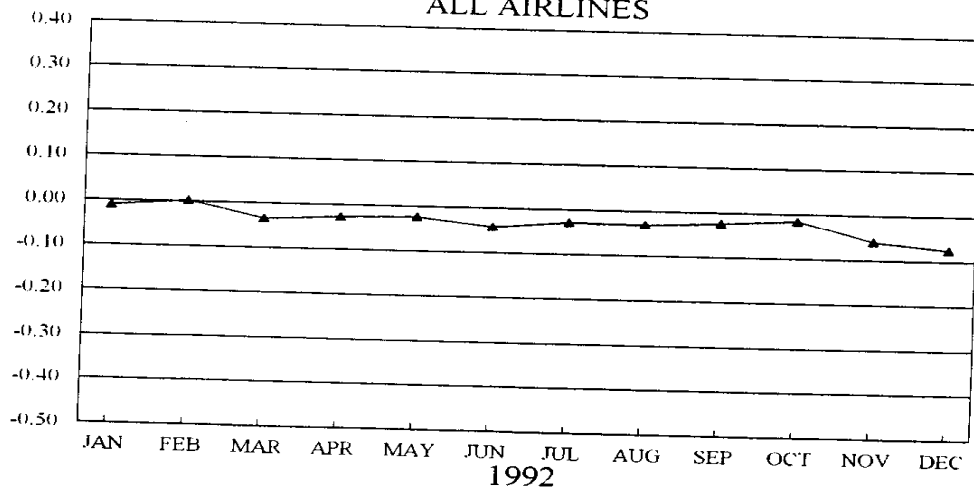


Industry Average AQR Scores (All Airlines)

	1992 Mean AQR Score	1992 Score Range		1991 Mean AQR Score
		High	Low	
American	0.290	0.339	0.224	0.323
Southwest	0.251	0.291	0.149	0.220
United	0.214	0.250	0.183	0.168
Delta	0.123	0.145	0.098	0.193
USAir	-0.024	0.107	-0.073	0.115
Northwest	-0.193	-0.133	-0.304	-0.143
America West	-0.267	-0.232	-0.296	-0.325
Continental	-0.274	-0.230	-0.347	-0.266
Trans World	-0.398	-0.279	-0.489	-0.435
Total Average	-0.031			-0.017

AIRLINE QUALITY RATING

ALL AIRLINES



AIRLINE QUALITY RATING

ALL AIRLINES - 1991/1992

