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# *The Airline Quality Rating 1998*

Brent Bowen
*University of Nebraska at Omaha*

Dean Headley
*Wichita State University*

UNO Aviation Institute

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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 has been appointed as a Graduate Faculty Fellow of the University of Nebraska System-wide Graduate College. Bowen attained his 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, Aviation Safety Counselor, and Aerospace Education Counselor. Dr. Bowen's research interests focus on aviation applications of public productivity enhancement and marketing in the areas of service quality evaluation, forecasting, and student recruitment in collegiate aviation programs. He is also well published in areas related to effective teaching. His professional affiliations include the University Aviation Association, Council on Aviation Accreditation, World Aerospace Education Association, International Air Transportation Research Group, Aerospace Education Association, Alpha Eta Rho International Aviation Fraternity, and the Nebraska Academy of Science. He also serves as program director and principal investigator of the National Aeronautics and Space Administration funded Nebraska Space Grant Consortium.

Dean Headley is Associate 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 and Statistics 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 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.

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 1998

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 1998, contains monthly Airline Quality Rating scores for 1997. Additional copies are available by contacting Wichita State University or University of Nebraska at Omaha.

The Airline Quality Rating 1998 is a summary of month-by-month quality ratings for the ten major U.S. airlines operating during 1997. Using the Airline Quality Rating system and monthly performance data for each airline for the calendar year of 1997, 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 airlines domestic operations for the 12 month period of 1997, and industry average results. Also, comparative Airline Quality Rating data for 1991 through 1996 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 were 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 airline domestic operations 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 the Department of Transportation's monthly *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 1997

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 1997. For comparison purposes, results for individual airlines are also displayed for 1991 through 1997. A composite industry average chart that combines the ten airlines tracked is shown.

Continuing a trend started in 1994, the AQR industry average scores show an industry that is improving in quality. 1997 shows the largest change for industry average AQR scores of any of the past seven years. Southwest remains at the top of the ratings, with Alaska (new to the ratings this year) as a clear second. A group of airlines, Continental, American, United, Delta, and Northwest, make up a closely competitive group in the middle. Continental is the most improved of this competitive group and of all airlines rated. A third group, America West, Trans World, and US Airways are not performing at the same level as the other major airlines across all of the AQR factors. America West and Trans World have, however, made dramatic gains in their overall AQR scores for 1997. The AQR results for 1997 indicate that:

- Southwest Airlines maintained the top rated position, with an improved 1997 average AQR score over 1996. While all of the major carriers increased their AQR scores in 1997, Southwest had a commanding lead. They recorded the best annual average on-time arrival percentage of the major carriers. Southwest had the second highest denied boardings rate and the fewest number of complaints per passenger flown.

- Alaska Airlines debuts in the AQR at the second ranked spot. Their performance on the combination of 19 factors puts them in a clear, but distant second to Southwest Airlines. Some notable areas of low performance are with mishandled baggage and involuntary denied boardings.

- Continental Airlines again showed dramatic gains in 1997, with the most improvement in AQR scores of all rated airlines. This performance resulted in their moving from a fifth to third place ranking among the ten major carriers. Better performance with the fewest denied boardings and second best mishandled baggage rate made a difference. The gain was made with consistently good performance in all areas rated. The AQR scores over the years show that Continental Airlines is clearly the most improved airline of the major carriers. Their consistent improvement since 1994 has taken them from last in the rankings to third.

- American Airlines improved their AQR score in 1997, but not enough to maintain their second position. Compared to 1996 their 1997 performance was better in on-time operations, they mishandled fewer bags, and had fewer involuntary denied passenger boardings. American, like all other airlines, had a higher volume of consumer complaints.

- United Airlines shows a higher AQR score for 1997, but with the inclusion of Alaska Airlines and better performance by Continental Airlines, they moved to the fifth ranked position. As with most airlines, United had a higher on-time arrival percentage for 1997, a similar rate of mishandled baggage and frequency of denied boardings, and a higher number of complaints by passengers. For the year, United was a relatively consistent quality performer.

- Delta Airlines showed improved AQR scores across 1997. Overall, Delta's average AQR score for the past three years has been steadily rising. Delta performed worse in on-time arrivals and involuntary denied boardings. They did post an improved baggage handling record and had fewer consumer complaints than last year.

- Northwest Airlines made consistent performance level increases across 1997. Like 1996, the current year saw a general increase in monthly scores. This increase did not effect their position, and kept them close to the performance levels of other airlines. Northwest tied for the second worst on-time arrival performance in the industry, and was the only airline to show a decrease in on-time performance for 1997 over 1996. Their performance on baggage handling was worse in 1997 also.

- America West had the second largest increase in overall AQR score of all the airlines rated. A serious denied boardings problem in the fourth quarter of 1996 was overcome by the second quarter of 1997 and helped America West hold it's relative position in the rankings.

- Trans World Airlines was the third most improved performer in 1997. TWA improved in on-time percentage (third best of the majors), baggage handling, and rate of consumer complaints. They were one of only two major airlines (Delta was the other) to have fewer consumer complaints filed for 1997 over 1996.

- US Airways AQR score improved across the year. Looking at some of the details reveals that US Airways was improved in areas of on-time performance (second highest among the majors), mishandled baggage, and denied boardings. They reflected the overall trend in the industry with a higher number of consumer complaints.

- For 1997 the overall industry average AQR score was the highest of any of the seven years rated. The AQR score improvement was the most of any year-to-year score changes since 1991. While factors of on-time performance, involuntary denied boardings, and mishandled baggage are better, a 20% increase in the number of complaints filed with the Department of Transportation runs counter to a recovered industry. Financial performance has certainly turned the corner along with some indicators of quality performance. Increased consumer dissatisfaction expressed by an increased volume of complaints seems to indicate that how things are done is just as important as what gets done.

Observations About the Industry

As measured by the Airline Quality Rating, quality increased more during 1997 than any previous year. 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 major carriers is a key finding of the AQR research methodology and helps demonstrate the competitive environment of the industry. Continued financial recovery was the hallmark of the airline industry in 1997. Most observers would agree that 1997 was a great year financially for the industry. Competition from new industry players is a concern for the airlines, as is a focus with negotiating both national and international alliances.

In a broader perspective, there are many issues which face the industry in 1998 and beyond. Looking ahead we see that:

- Profitability in the industry is soaring due to increasing productivity and reduced costs. Huge savings are resulting from fuel cost reductions. Human resource costs have been cut to the minimum, and changes are underway to reverse previous actions.

- Regulatory scrutiny would be accelerating if not for the inability of the Federal Aviation Administration to act on pressing needs. The slow pace of meeting the mandates of recent commissions and congressional directives will continue to prevent aggressive pursuit of new safety benchmarks. NASA is accelerating efforts to provide enhancements to safety but implementation of new technology will encounter the same huddles as Air Traffic Control (ATC) modernization. Air traffic control modernization is moving ahead slowly. The DOT and FAA must find a way to resolve the responsibility and funding issues. This is a critical element in keeping the sky safe.

- Seemingly unfair practices by the airlines continue to limit benefits for consumers. Courts will determine challenges of unfair pricing tactics which target smaller carriers. Sales of seats at less than actual costs continues while a heavier burden is placed on the business traveler. Travel agents have been raising questions of unfair practice by the airlines for the past several years.

- Mega-carrier relationship agreements continue to accelerate airlines misconception that they must be all things to all consumers and go all places. It appears that niche markets, quality customer service, and fair pricing are being replaced with attitudes of domination and desires to service all routes, profitable or not. This approach will certainly make some carriers stronger, but leave others in troubled relationships and facing potential bankruptcy.

- Increasing restrictions on the use and accumulation of frequent flyer miles is driving consumer loyalty to the brink of disassociation. Airlines continue to view their once valued frequent flyer programs as financial liability rather than as marketing enhancement. With few to no frequent flyer seats available on flights even six months in advance, consumers are becoming aggravated and loose sight of loyalty benefits. The movement to change from mile accumulation to awards based on ticket price will further alienate many consumers. Soon, consumers will become more

loyal to price and schedule only and regard frequent flyer programs as marketing ploys with no tangible value. Maybe this is what the airlines want.

- U.S. airlines insistence on entering the local and regional markets of other countries may lead to less than anticipated advantages. Many foreign carriers may do better in the U.S. market than ours fare in the opposite. The rush toward new open sky agreements may not have the desired result for the U.S. major airlines.

- Human resource/ employee issues are a changing dynamic in all phases of airline operation. Pilot unions are forcing agreements that push the threshold of reason. Consumers and other airline personnel as well have been offended by the rhetoric of low six figure pay and harsh three day work weeks of pilots. Flight attendants and counter service personnel who are the lowest paid, highest consumer contact personnel have taken the brunt of cut-backs and reductions. The long lines, baggage mishandling and aggravation over daily changing carry-on restrictions are most readily seen as results by the consumer. These burdened front-line workers are pressed to maintain a positive service oriented attitude while their frustrations are being observed by the consumer.

- Internet ticketing and ticketless bookings are areas that both consumers and airlines are watching. At present, this provides a mechanism for greater access and greater disparity in pricing which fills last minute seats cheaply, thus seemingly benefiting both parties. Revenue of substance will not be realized until greater advantages entice high-end consumers to buy on-line. The rapid move by airlines to taking out the travel agents position in the distribution channel is premature. Caution, more thought and planning needs to be given before hastily relying on this new segment of distribution.

- Continued movement toward point-to-point service availability will continue be an opportunity for the rest of the '90s. Consumers are demanding this type of service delivery. Increased competition from startups, more niche marketing, and new smaller economical jet aircraft will produce opportunities for route structures that force all airlines to be alert in identifying and meeting consumer demand to stay competitive in city-pair markets.

- Stage 3 readiness (noise abatement) is fast approaching a deadline in the year 2000. While airlines are making good efforts to meet the requirements, as much as 30% of the U.S. jet fleet still does not fully meet the federal guidelines for the year 2000. This should continue to affect the activity seen in new aircraft manufacturing, purchasing, and related industries.

- Revival of the Essential Air Services program under the DOT will create new opportunities for connecting rural areas to regional carriers. With the implementation of the Rural Air Service Survival Act in 1998, fees charged to foreign airlines overflying the U.S. will generate an expected $50 million annually that will be used to subsidize and improve rural air service and routes. Implementation has, however, been stalled through recent court actions.

## Previous Airline Quality Reports


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For more information contact either:

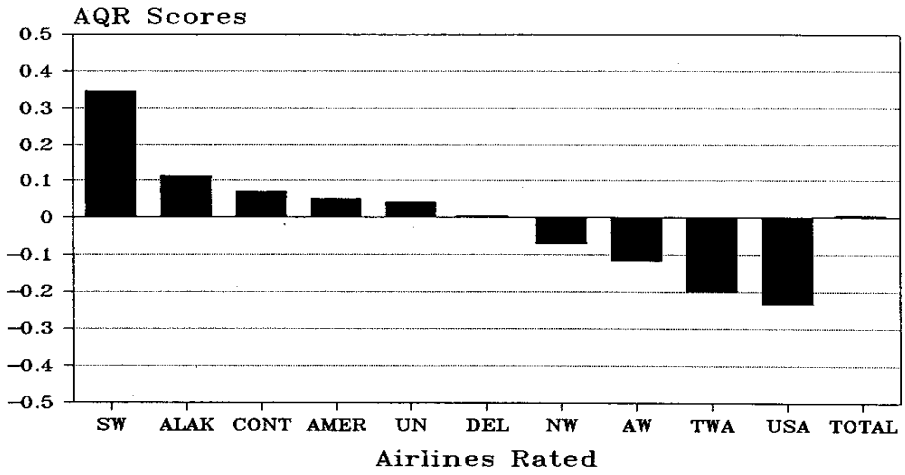

Dr. Dean E. Headley, Associate Professor
W. Frank Barton School of Business
Wichita State University
304 Clinton Hall
Wichita, KS 67260-0084

Office: (316) 978-3367
FAX: 316-978-3276
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

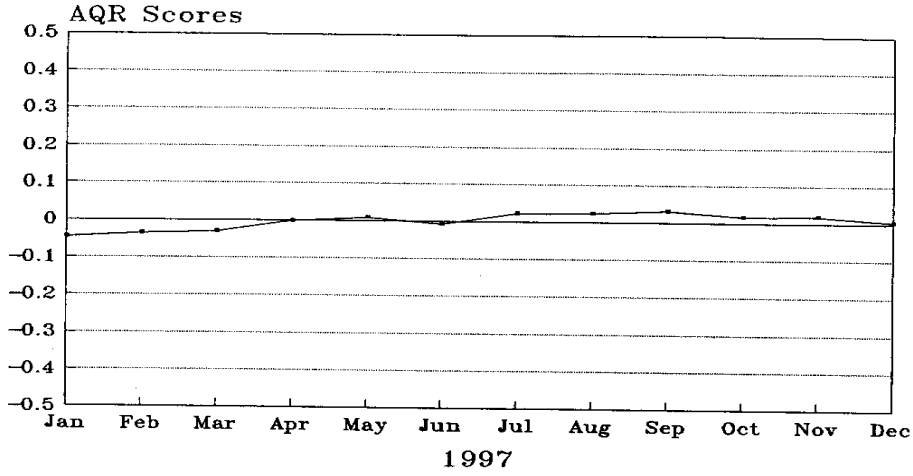
# AIRLINE QUALITY RATING
## MEAN AQR SCORES – 1997




Industry Average AQR Scores for U.S. Major Airlines

| | 1997 | 1996 | 1995 | 1994 | 1993 | 1992 | 1991 |
|---|---|---|---|---|---|---|---|
| Southwest | 0.346 | 0.306 | 0.221 | 0.211 | 0.252 | 0.251 | 0.220 |
| Alaska | 0.112 | | | | | | |
| Continental | 0.069 | -0.095 | -0.340 | -0.574 | -0.540 | -0.274 | -0.266 |
| American | 0.050 | 0.033 | 0.164 | 0.225 | 0.231 | 0.290 | 0.323 |
| United | 0.041 | 0.031 | 0.058 | 0.123 | 0.176 | 0.214 | 0.168 |
| Delta | 0.000 | -0.017 | -0.024 | -0.031 | 0.076 | 0.123 | 0.193 |
| Northwest | -0.069 | -0.100 | -0.222 | -0.210 | -0.247 | -0.193 | -0.143 |
| America West | -0.116 | -0.275 | -0.145 | -0.282 | -0.294 | -0.267 | -0.325 |
| Trans World | -0.199 | -0.302 | -0.303 | -0.307 | -0.286 | -0.398 | -0.435 |
| US Airways | -0.233 | -0.267 | -0.262 | -0.148 | -0.003 | -0.024 | 0.115 |
| Total Average | 0.000 | -0.076 | -0.090 | -0.110 | -0.070 | -0.031 | -0.017 |

# AIRLINE QUALITY RATING
## ALL AIRLINES 1997

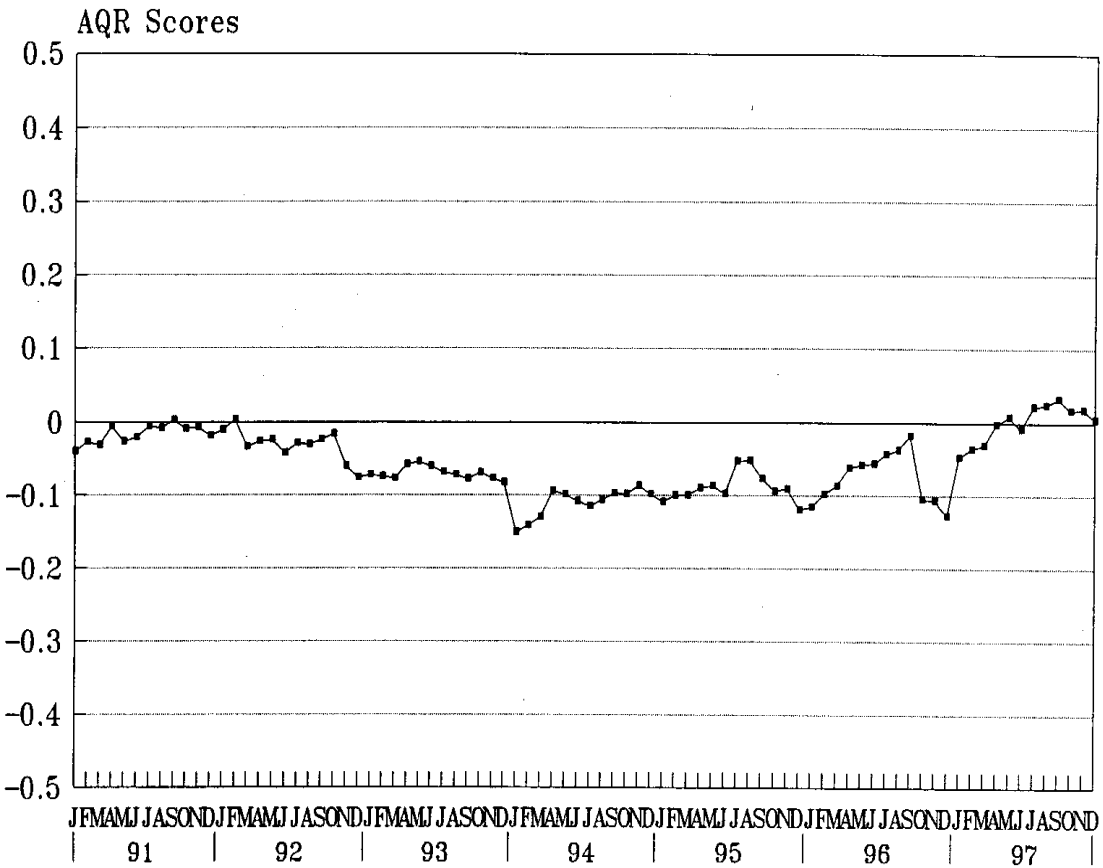



**Average Monthly AQR Scores for U.S. Major Airlines**

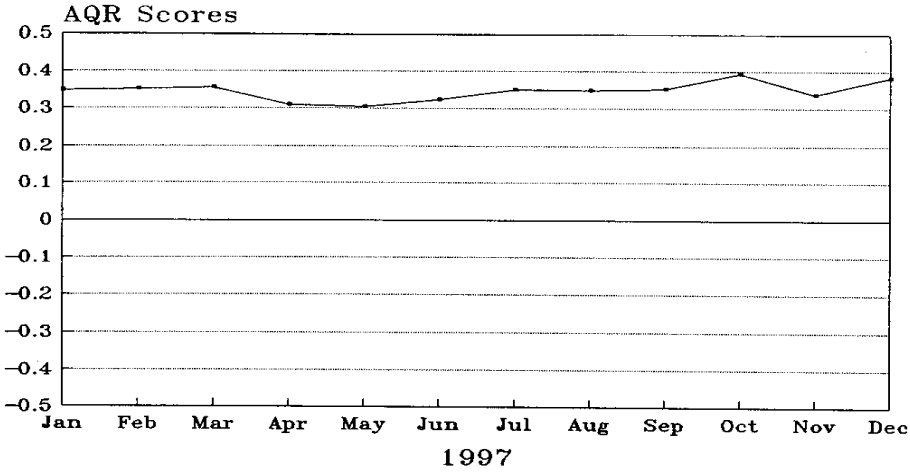
| | 1997 | 1996 | 1995 | 1994 | 1993 | 1992 | 1991 |
|---|---|---|---|---|---|---|---|
| January | -0.047 | -0.115 | -0.109 | -0.151 | -0.072 | -0.011 | -0.040 |
| February | -0.036 | -0.098 | -0.100 | -0.142 | -0.075 | -0.003 | -0.028 |
| March | -0.031 | -0.087 | -0.100 | -0.130 | -0.077 | -0.034 | -0.032 |
| April | -0.002 | -0.062 | -0.090 | -0.094 | -0.058 | -0.027 | -0.006 |
| May | 0.008 | -0.058 | -0.087 | -0.099 | -0.054 | -0.024 | -0.027 |
| June | -0.008 | -0.056 | -0.097 | -0.108 | -0.060 | -0.042 | -0.021 |
| July | 0.022 | -0.043 | -0.053 | -0.114 | -0.068 | -0.029 | -0.006 |
| August | 0.024 | -0.037 | -0.052 | -0.106 | -0.072 | -0.031 | -0.008 |
| September | 0.032 | -0.018 | -0.077 | -0.097 | -0.078 | -0.024 | 0.002 |
| October | 0.017 | -0.105 | -0.093 | -0.098 | -0.069 | -0.016 | -0.009 |
| November | 0.018 | -0.106 | -0.091 | -0.087 | -0.077 | -0.060 | -0.007 |
| December | 0.005 | -0.127 | -0.119 | -0.098 | -0.083 | -0.076 | -0.019 |
| Average | 0.000 | -0.076 | -0.090 | -0.110 | -0.070 | -0.031 | -0.017 |

# AIRLINE QUALITY RATING

## ALL AIRLINES 1991 - 1997



# AIRLINE QUALITY RATING
## SOUTHWEST – 1997

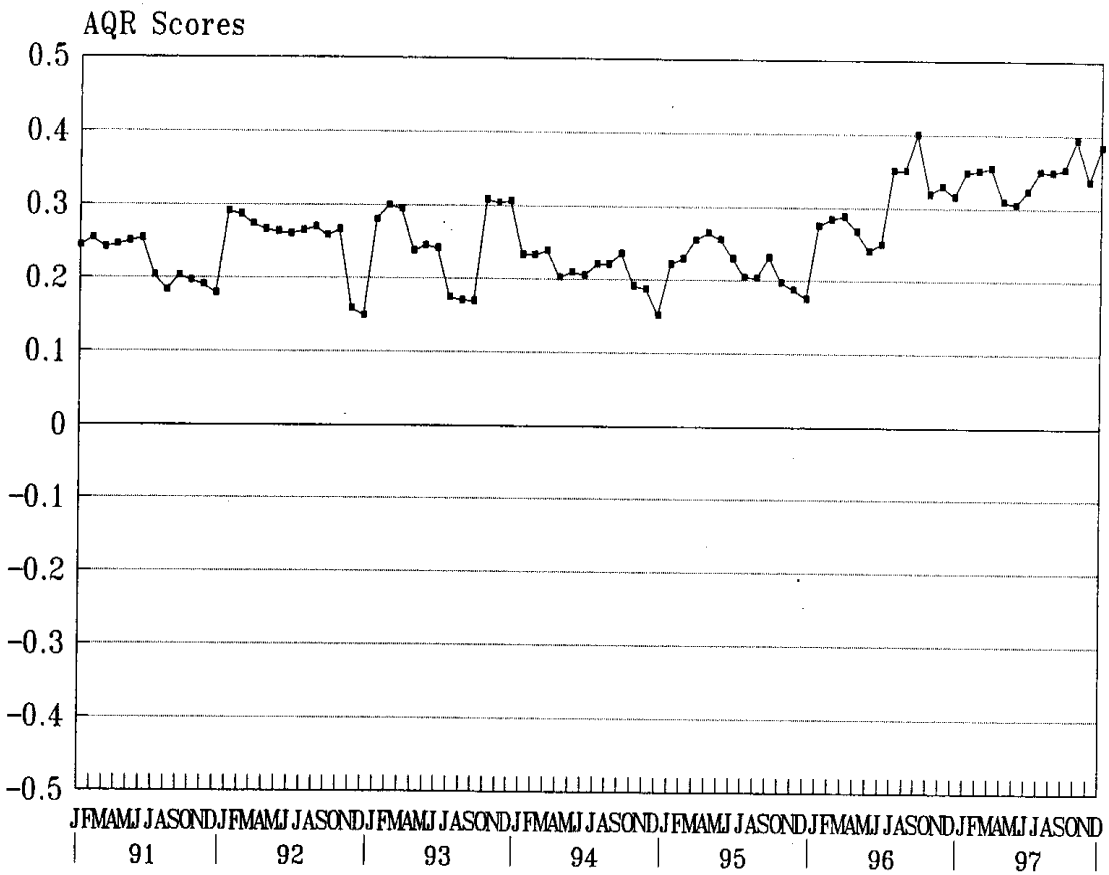



Monthly AQR Scores: Southwest Airlines

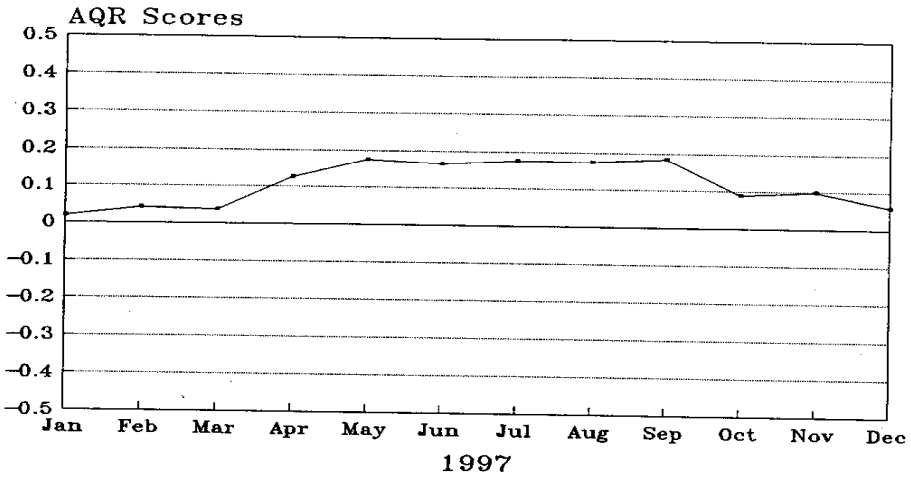
| | 1997 | 1996 | 1995 | 1994 | 1993 | 1992 | 1991 |
|---|---|---|---|---|---|---|---|
| January | 0.348 | 0.274 | 0.222 | 0.233 | 0.280 | 0.291 | 0.244 |
| February | 0.351 | 0.284 | 0.229 | 0.233 | 0.300 | 0.287 | 0.254 |
| March | 0.355 | 0.288 | 0.255 | 0.239 | 0.295 | 0.274 | 0.241 |
| April | 0.309 | 0.268 | 0.265 | 0.202 | 0.238 | 0.266 | 0.245 |
| May | 0.305 | 0.241 | 0.256 | 0.210 | 0.245 | 0.263 | 0.250 |
| June | 0.323 | 0.250 | 0.230 | 0.206 | 0.241 | 0.261 | 0.254 |
| July | 0.350 | 0.351 | 0.204 | 0.221 | 0.174 | 0.265 | 0.203 |
| August | 0.349 | 0.351 | 0.203 | 0.221 | 0.170 | 0.270 | 0.183 |
| September | 0.353 | 0.400 | 0.232 | 0.236 | 0.169 | 0.256 | 0.202 |
| October | 0.394 | 0.319 | 0.197 | 0.191 | 0.308 | 0.266 | 0.196 |
| November | 0.337 | 0.330 | 0.187 | 0.187 | 0.304 | 0.159 | 0.190 |
| December | 0.384 | 0.316 | 0.175 | 0.151 | 0.306 | 0.149 | 0.179 |
| Average | 0.346 | 0.306 | 0.221 | 0.211 | 0.252 | 0.251 | 0.220 |

# AIRLINE QUALITY RATING

## SOUTHWEST 1991 - 1997



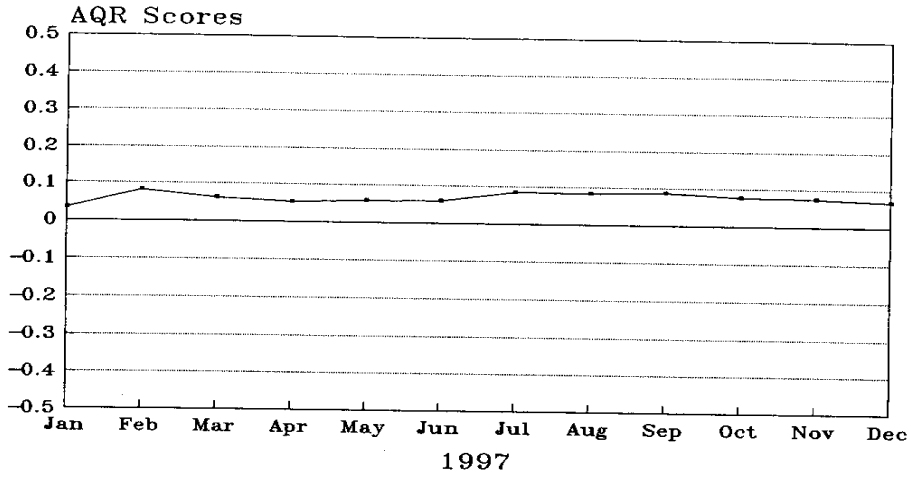
# AIRLINE QUALITY RATING
## ALASKA – 1997




**Monthly AQR Scores: Alaska Airlines**

| | 1997 |
|---|---|
| January | 0.019 |
| February | 0.042 |
| March | 0.037 |
| April | 0.126 |
| May | 0.175 |
| June | 0.165 |
| July | 0.175 |
| August | 0.174 |
| September | 0.185 |
| October | 0.089 |
| November | 0.099 |
| December | 0.058 |
| Average | 0.112 |

# AIRLINE QUALITY RATING
## CONTINENTAL - 1997

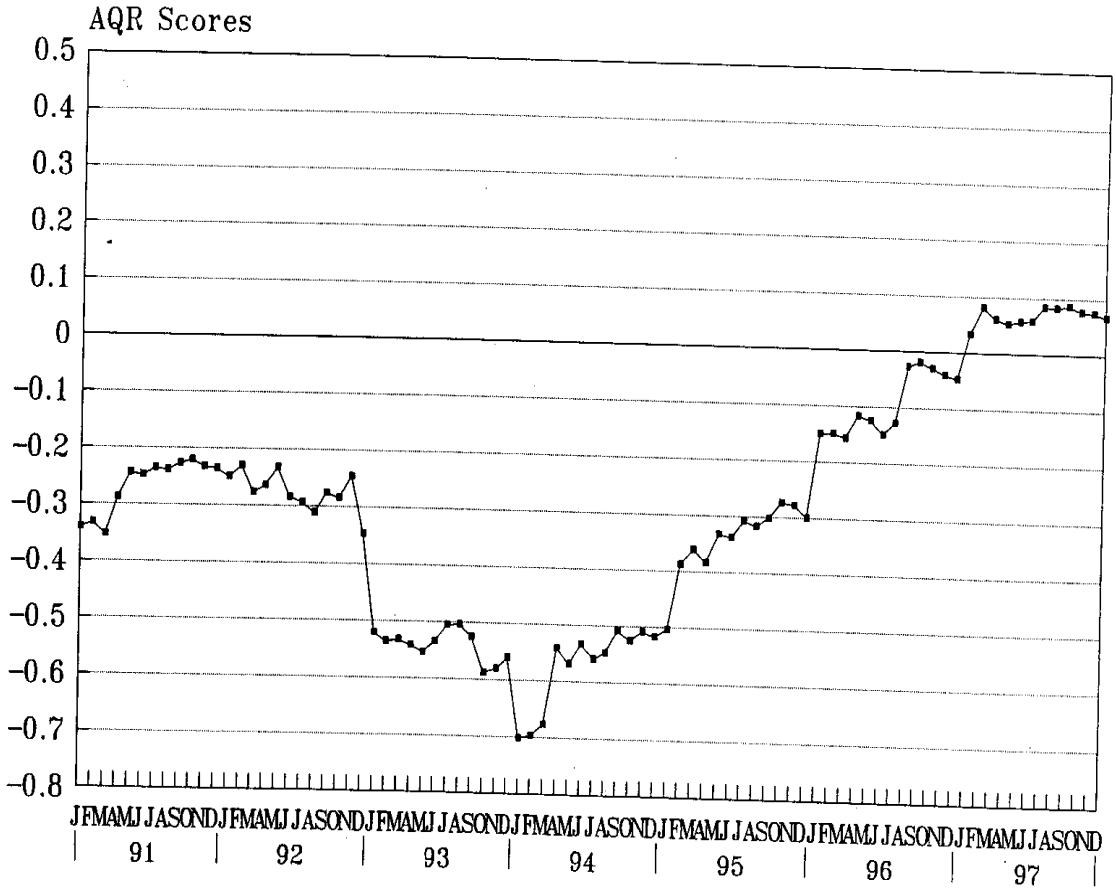



Monthly AQR Scores: Continental Airlines

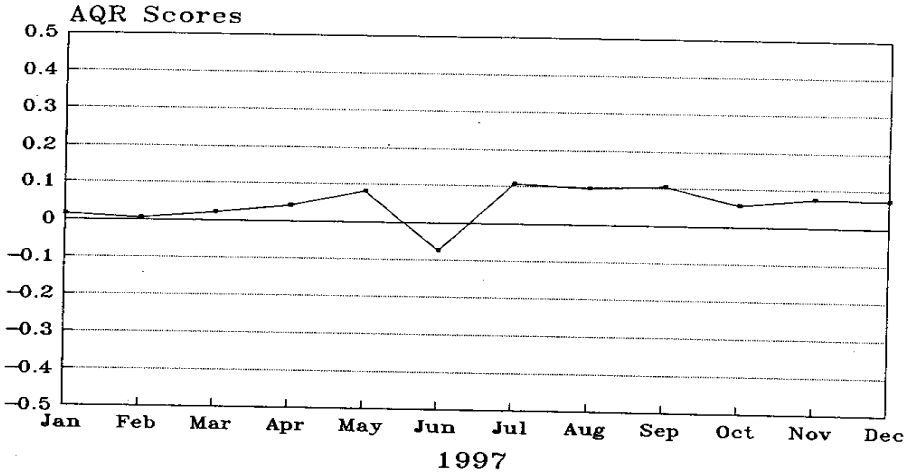
| | 1997 | 1996 | 1995 | 1994 | 1993 | 1992 | 1991 |
|---|---|---|---|---|---|---|---|
| January | 0.034 | -0.150 | -0.504 | -0.702 | -0.521 | -0.249 | -0.341 |
| February | 0.081 | -0.149 | -0.387 | -0.697 | -0.536 | -0.230 | -0.332 |
| March | 0.062 | -0.156 | -0.361 | -0.677 | -0.532 | -0.277 | -0.353 |
| April | 0.053 | -0.116 | -0.383 | -0.542 | -0.542 | -0.264 | -0.288 |
| May | 0.058 | -0.125 | -0.332 | -0.569 | -0.555 | -0.232 | -0.244 |
| June | 0.059 | -0.149 | -0.338 | -0.533 | -0.535 | -0.285 | -0.248 |
| July | 0.085 | -0.128 | -0.308 | -0.560 | -0.505 | -0.293 | -0.235 |
| August | 0.084 | -0.027 | -0.316 | -0.548 | -0.504 | -0.311 | -0.239 |
| September | 0.087 | -0.019 | -0.302 | -0.508 | -0.525 | -0.276 | -0.227 |
| October | 0.077 | -0.029 | -0.274 | -0.525 | -0.588 | -0.285 | -0.221 |
| November | 0.075 | -0.041 | -0.279 | -0.509 | -0.581 | -0.246 | -0.232 |
| December | 0.068 | -0.047 | -0.300 | -0.518 | -0.561 | -0.347 | -0.235 |
| Average | 0.069 | -0.095 | -0.340 | -0.574 | -0.540 | -0.274 | -0.266 |

# AIRLINE QUALITY RATING

## CONTINENTAL 1991 - 1997



# AIRLINE QUALITY RATING
## AMERICAN – 1997

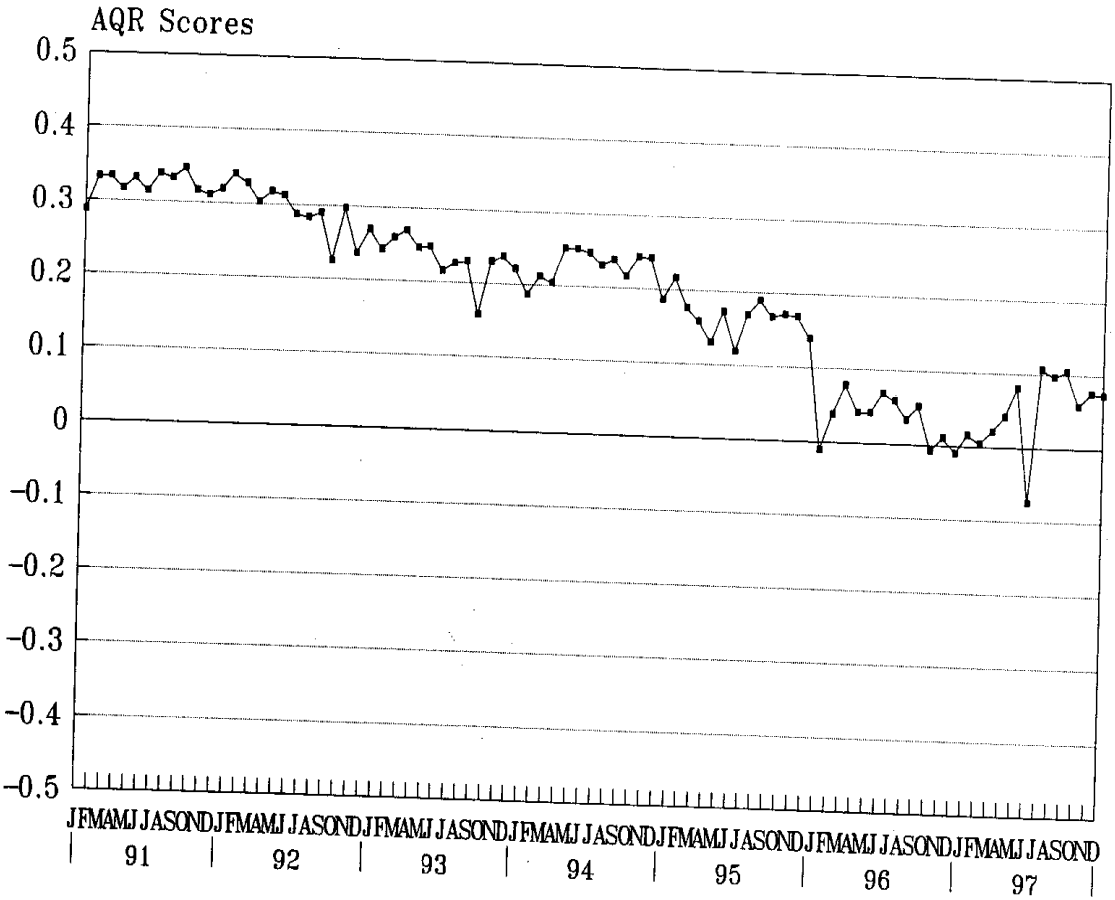



Monthly AQR Scores: American Airlines

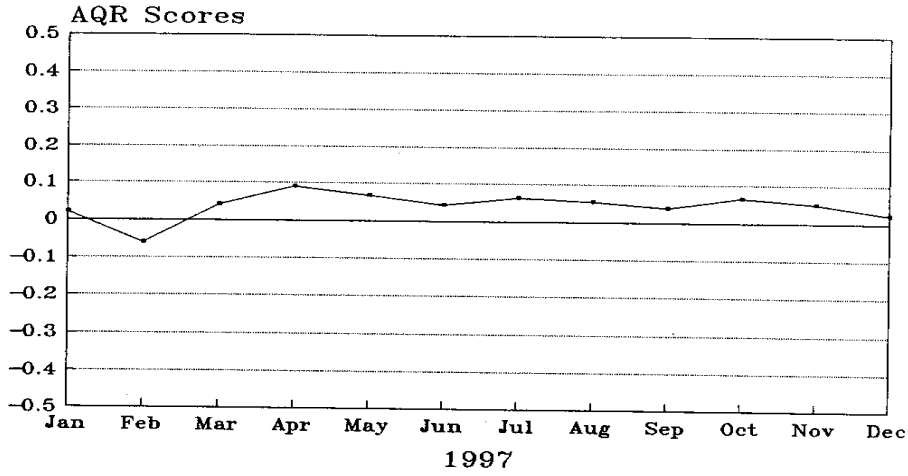
| | 1997 | 1996 | 1995 | 1994 | 1993 | 1992 | 1991 |
|---|---|---|---|---|---|---|---|
| January | 0.015 | -0.011 | 0.216 | 0.187 | 0.242 | 0.339 | 0.287 |
| February | 0.004 | 0.038 | 0.176 | 0.212 | 0.258 | 0.327 | 0.332 |
| March | 0.021 | 0.078 | 0.158 | 0.203 | 0.269 | 0.302 | 0.333 |
| April | 0.041 | 0.041 | 0.130 | 0.251 | 0.245 | 0.317 | 0.316 |
| May | 0.081 | 0.041 | 0.172 | 0.251 | 0.248 | 0.312 | 0.331 |
| June | -0.074 | 0.068 | 0.119 | 0.246 | 0.215 | 0.287 | 0.313 |
| July | 0.107 | 0.058 | 0.168 | 0.230 | 0.226 | 0.283 | 0.338 |
| August | 0.097 | 0.033 | 0.189 | 0.238 | 0.229 | 0.289 | 0.332 |
| September | 0.104 | 0.052 | 0.167 | 0.216 | 0.157 | 0.224 | 0.346 |
| October | 0.057 | -0.007 | 0.171 | 0.243 | 0.230 | 0.296 | 0.316 |
| November | 0.075 | 0.010 | 0.169 | 0.242 | 0.237 | 0.236 | 0.310 |
| December | 0.073 | -0.010 | 0.139 | 0.186 | 0.221 | 0.269 | 0.318 |
| Average | 0.050 | 0.033 | 0.164 | 0.225 | 0.231 | 0.290 | 0.323 |

# AIRLINE QUALITY RATING

## AMERICAN 1991 - 1997



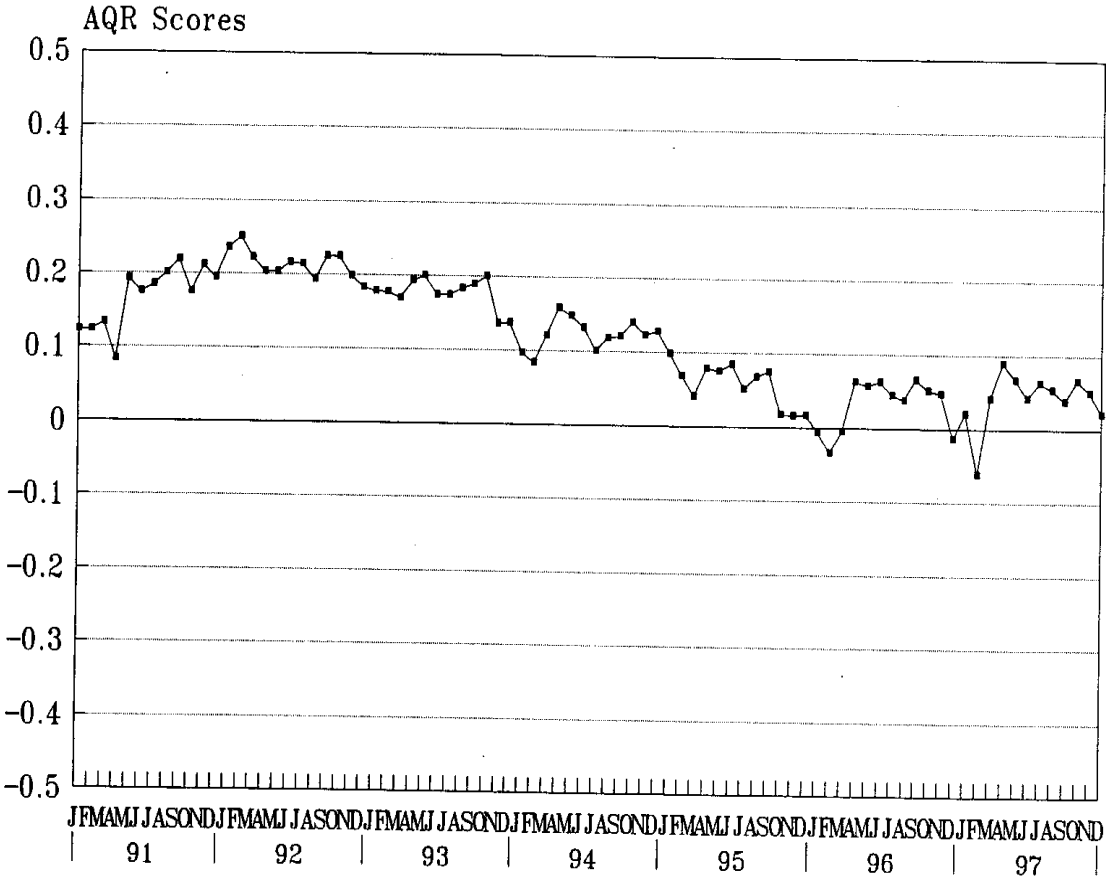
# AIRLINE QUALITY RATING
## UNITED – 1997




**Monthly AQR Scores: United Airlines**

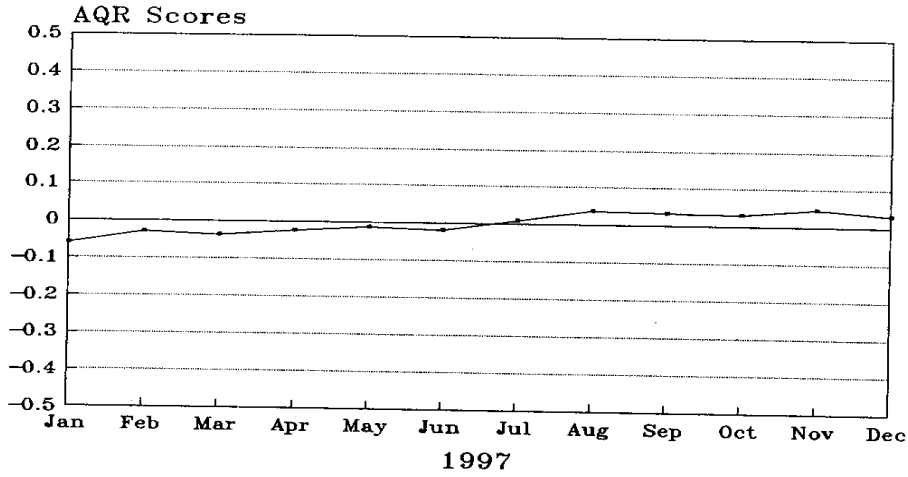
| | 1997 | 1996 | 1995 | 1994 | 1993 | 1992 | 1991 |
|---|---|---|---|---|---|---|---|
| January | 0.021 | -0.006 | 0.099 | 0.097 | 0.178 | 0.235 | 0.123 |
| February | -0.061 | -0.033 | 0.069 | 0.084 | 0.177 | 0.250 | 0.123 |
| March | 0.042 | -0.004 | 0.041 | 0.121 | 0.169 | 0.222 | 0.133 |
| April | 0.090 | 0.063 | 0.079 | 0.159 | 0.193 | 0.203 | 0.083 |
| May | 0.067 | 0.057 | 0.075 | 0.148 | 0.200 | 0.203 | 0.192 |
| June | 0.043 | 0.063 | 0.085 | 0.132 | 0.174 | 0.215 | 0.175 |
| July | 0.063 | 0.045 | 0.052 | 0.101 | 0.174 | 0.214 | 0.185 |
| August | 0.054 | 0.039 | 0.068 | 0.118 | 0.183 | 0.193 | 0.201 |
| September | 0.039 | 0.066 | 0.075 | 0.121 | 0.189 | 0.224 | 0.219 |
| October | 0.066 | 0.052 | 0.018 | 0.140 | 0.200 | 0.224 | 0.175 |
| November | 0.051 | 0.048 | 0.016 | 0.123 | 0.136 | 0.198 | 0.211 |
| December | 0.022 | -0.013 | 0.017 | 0.128 | 0.138 | 0.183 | 0.194 |
| Average | 0.041 | 0.031 | 0.058 | 0.123 | 0.176 | 0.214 | 0.168 |

# AIRLINE QUALITY RATING
## UNITED 1991 - 1997



# AIRLINE QUALITY RATING

## DELTA – 1997

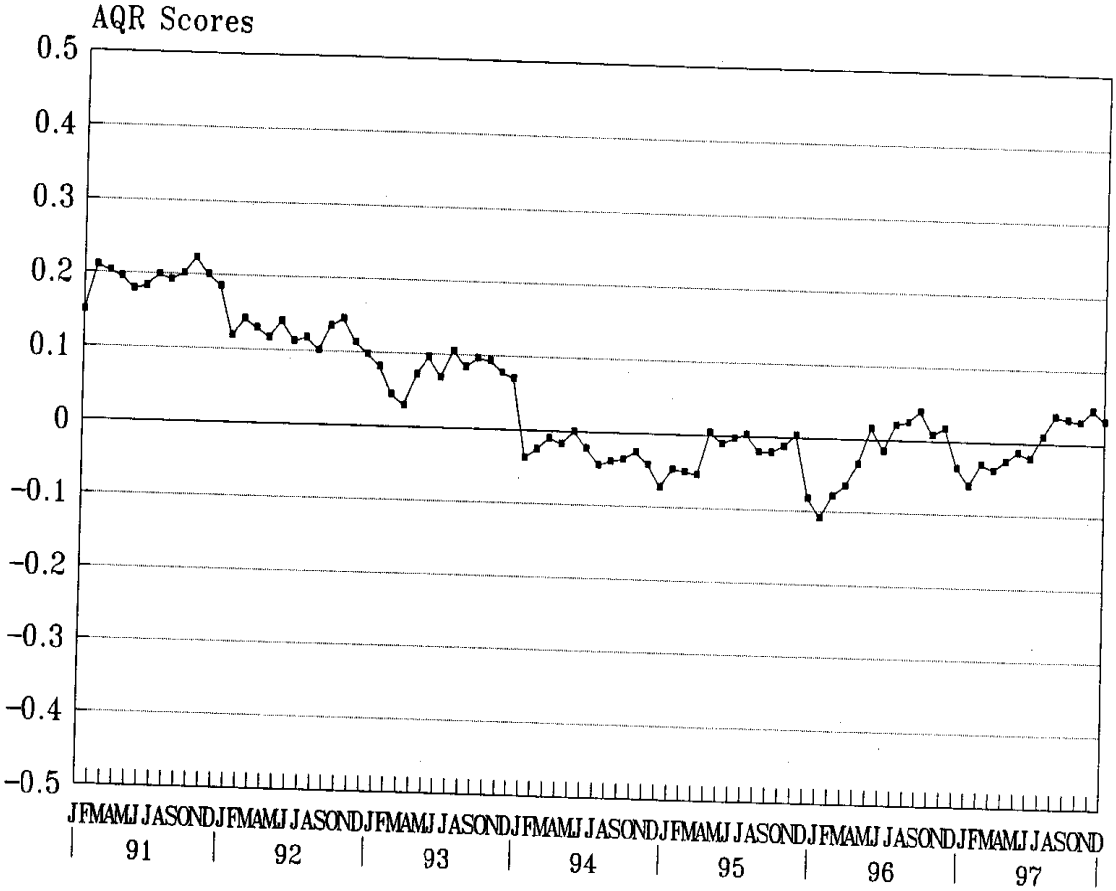



Monthly AQR Scores: Delta Airlines

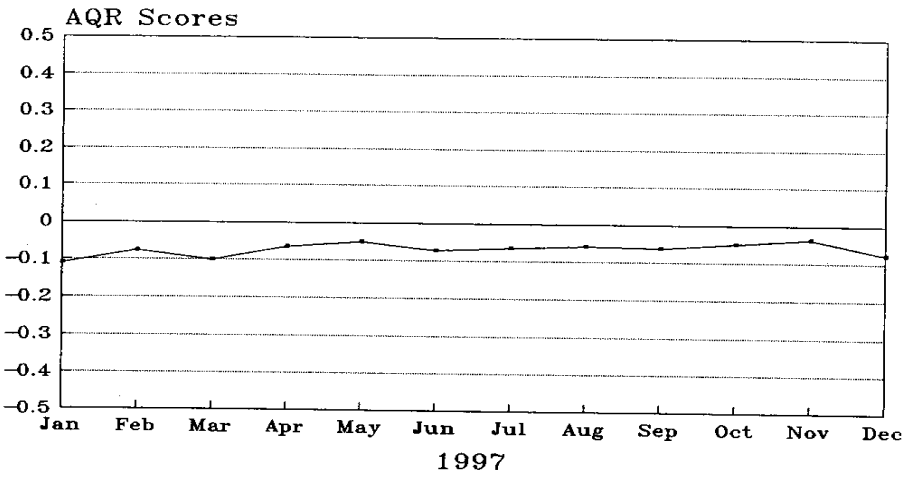
| | 1997 | 1996 | 1995 | 1994 | 1993 | 1992 | 1991 |
|---|---|---|---|---|---|---|---|
| January | -0.060 | -0.109 | -0.048 | -0.037 | 0.082 | 0.119 | 0.149 |
| February | -0.030 | -0.078 | -0.050 | -0.025 | 0.044 | 0.142 | 0.210 |
| March | -0.038 | -0.064 | -0.054 | -0.010 | 0.029 | 0.130 | 0.202 |
| April | -0.025 | -0.033 | 0.004 | -0.017 | 0.072 | 0.117 | 0.195 |
| May | -0.013 | 0.015 | -0.011 | 0.000 | 0.096 | 0.140 | 0.179 |
| June | -0.020 | -0.015 | -0.003 | -0.022 | 0.069 | 0.113 | 0.183 |
| July | 0.009 | 0.021 | 0.002 | -0.045 | 0.105 | 0.118 | 0.198 |
| August | 0.037 | 0.025 | -0.020 | -0.039 | 0.084 | 0.101 | 0.192 |
| September | 0.033 | 0.040 | -0.020 | -0.036 | 0.096 | 0.135 | 0.201 |
| October | 0.030 | 0.008 | -0.012 | -0.025 | 0.093 | 0.145 | 0.222 |
| November | 0.046 | 0.018 | 0.003 | -0.042 | 0.078 | 0.113 | 0.200 |
| December | 0.032 | -0.036 | -0.082 | -0.072 | 0.070 | 0.098 | 0.185 |
| Average | 0.000 | -0.017 | -0.024 | -0.031 | 0.076 | 0.123 | 0.193 |

# AIRLINE QUALITY RATING

## DELTA 1991 - 1997



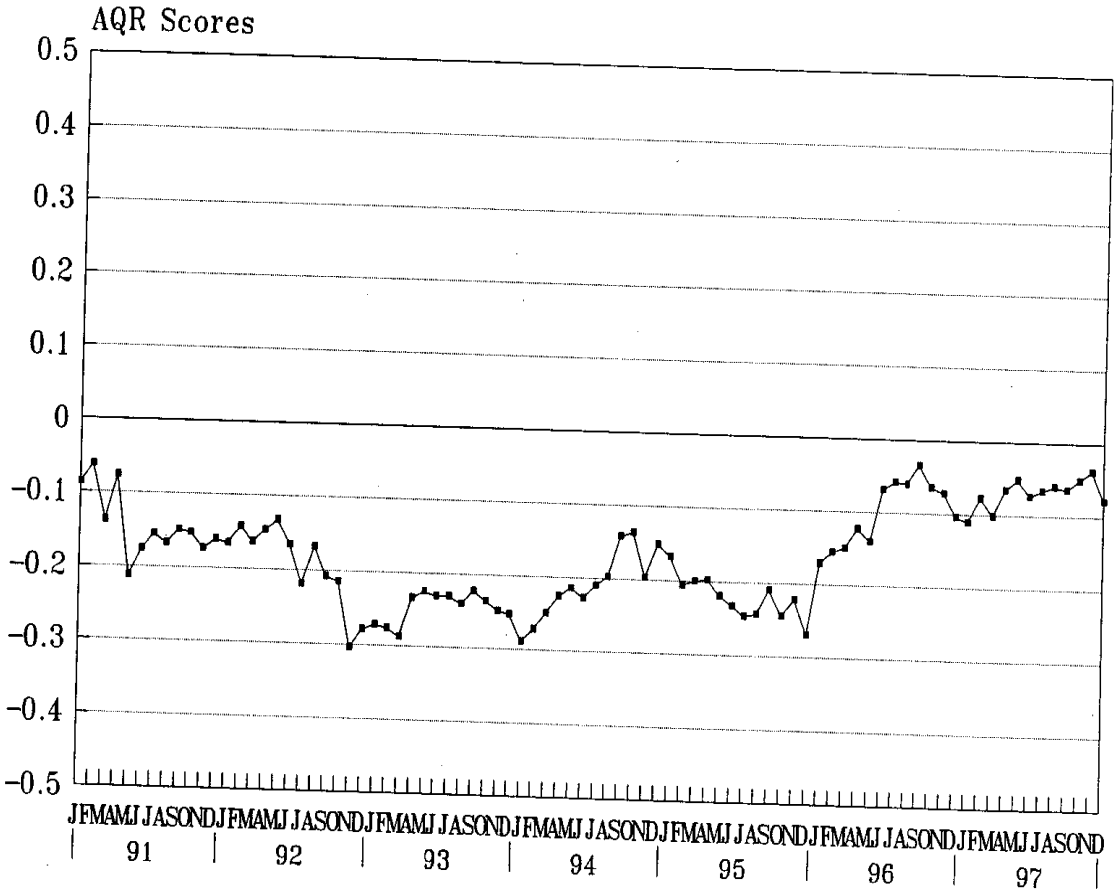
# AIRLINE QUALITY RATING
## NORTHWEST – 1997




Monthly AQR Scores: Northwest Airlines

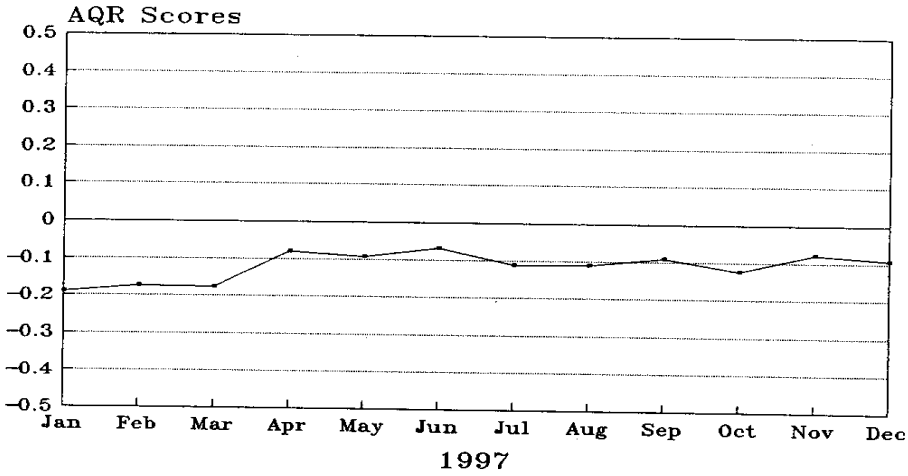
| | 1997 | 1996 | 1995 | 1994 | 1993 | 1992 | 1991 |
|---|---|---|---|---|---|---|---|
| January | -0.110 | -0.171 | -0.168 | -0.289 | -0.272 | -0.166 | -0.087 |
| February | -0.077 | 0.156 | -0.206 | -0.272 | -0.276 | -0.143 | -0.062 |
| March | -0.101 | -0.150 | -0.200 | -0.250 | -0.288 | -0.164 | -0.138 |
| April | -0.065 | -0.122 | -0.198 | -0.226 | -0.234 | -0.147 | -0.076 |
| May | -0.051 | -0.140 | -0.220 | -0.215 | -0.225 | -0.133 | -0.213 |
| June | -0.073 | -0.068 | -0.233 | -0.228 | -0.231 | -0.166 | -0.177 |
| July | -0.066 | -0.058 | -0.246 | -0.210 | -0.230 | -0.220 | -0.156 |
| August | -0.059 | -0.060 | -0.243 | -0.198 | -0.241 | -0.168 | -0.168 |
| September | -0.063 | -0.034 | -0.210 | -0.142 | -0.223 | -0.208 | -0.149 |
| October | -0.050 | -0.064 | -0.245 | -0.136 | -0.236 | -0.215 | -0.153 |
| November | -0.038 | -0.071 | -0.222 | -0.197 | -0.249 | -0.304 | -0.174 |
| December | -0.078 | -0.104 | -0.270 | -0.152 | -0.253 | -0.279 | -0.161 |
| Average | -0.069 | -0.100 | -0.222 | -0.210 | -0.247 | -0.193 | -0.143 |

# AIRLINE QUALITY RATING
## NORTHWEST 1991 - 1997



# AIRLINE QUALITY RATING

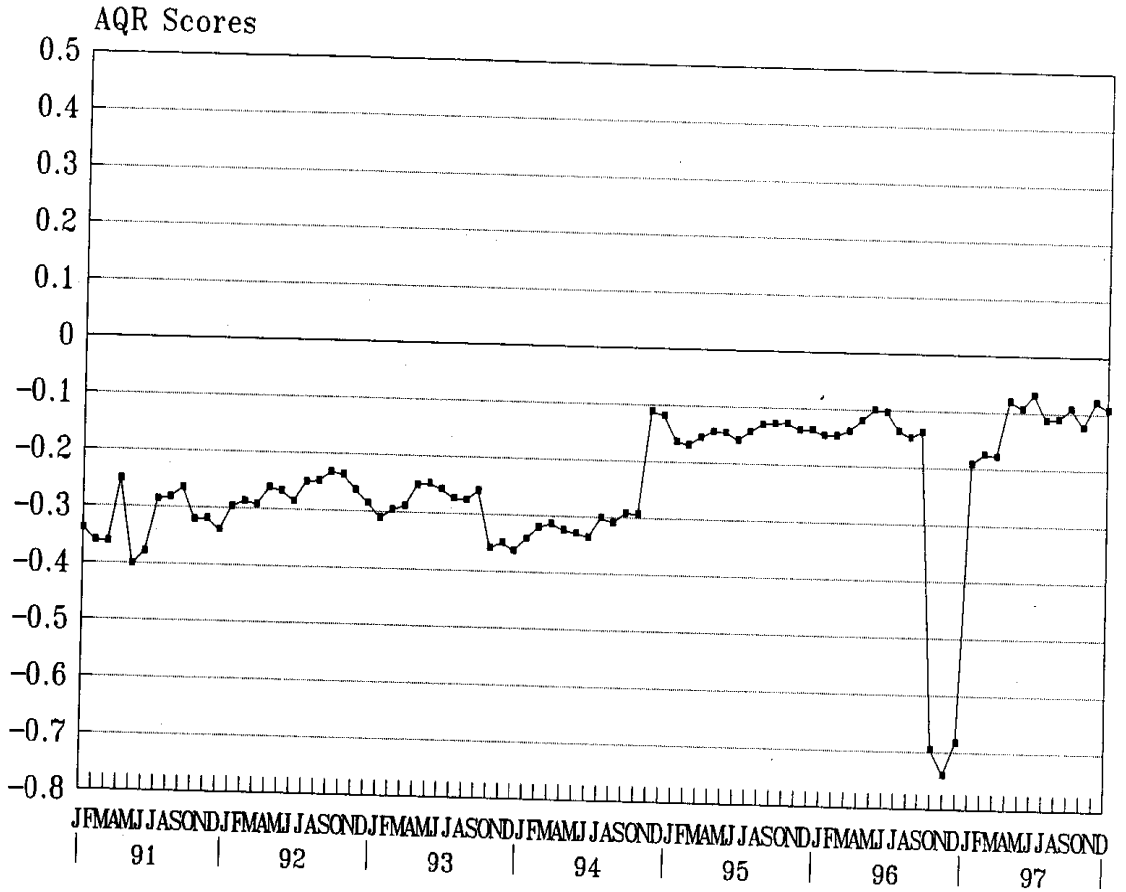
## AMERICA WEST – 1997



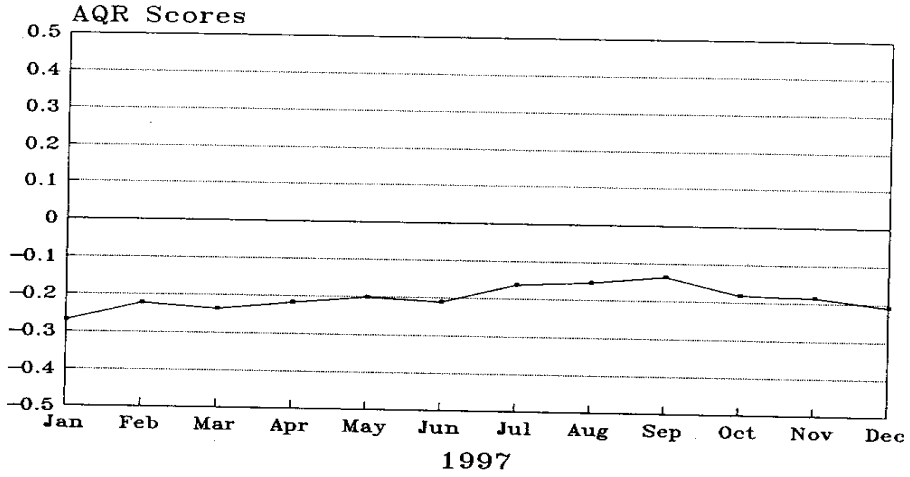

Monthly AQR Scores: America West Airlines

| | 1997 | 1996 | 1995 | 1994 | 1993 | 1992 | 1991 |
|---|---|---|---|---|---|---|---|
| January | -0.191 | -0.147 | -0.164 | -0.341 | -0.310 | -0.296 | -0.339 |
| February | -0.174 | -0.147 | -0.169 | -0.320 | -0.296 | -0.287 | -0.361 |
| March | -0.177 | -0.139 | -0.155 | -0.313 | -0.289 | -0.292 | -0.362 |
| April | -0.080 | -0.120 | -0.145 | -0.324 | -0.251 | -0.262 | -0.251 |
| May | -0.092 | -0.100 | -0.146 | -0.329 | -0.248 | -0.267 | -0.401 |
| June | -0.068 | -0.103 | -0.159 | -0.335 | -0.258 | -0.285 | -0.379 |
| July | -0.112 | -0.136 | -0.144 | -0.301 | -0.273 | -0.250 | -0.286 |
| August | -0.110 | -0.148 | -0.130 | -0.309 | -0.275 | -0.248 | -0.282 |
| September | -0.091 | -0.138 | -0.128 | -0.292 | -0.259 | -0.232 | -0.265 |
| October | -0.124 | -0.695 | -0.127 | -0.293 | -0.359 | -0.237 | -0.321 |
| November | -0.078 | -0.740 | -0.139 | -0.111 | -0.349 | -0.263 | -0.319 |
| December | -0.092 | -0.682 | -0.138 | -0.119 | -0.363 | -0.285 | -0.338 |
| Average | -0.116 | -0.275 | -0.145 | -0.282 | -0.294 | -0.267 | -0.325 |

# AIRLINE QUALITY RATING
## AMERICA WEST 1991 - 1997



# AIRLINE QUALITY RATING
## TRANS WORLD – 1997

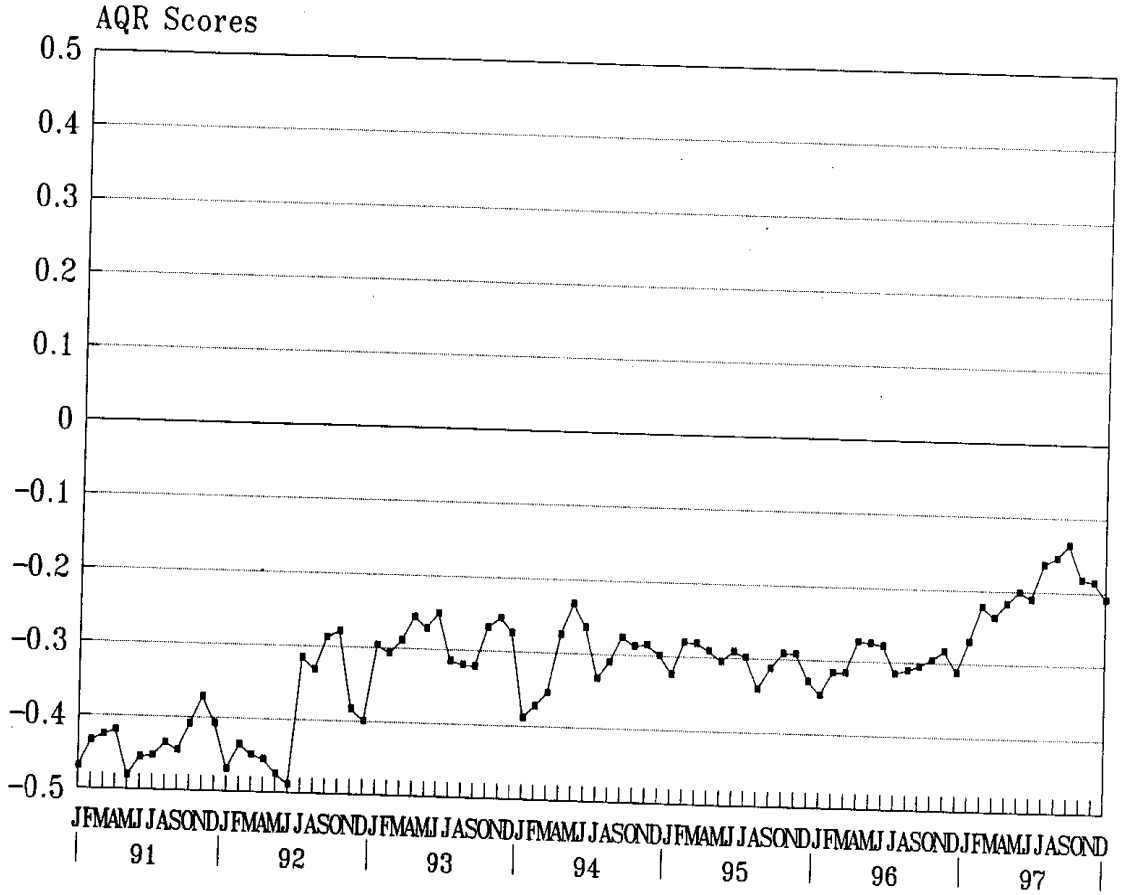



Monthly AQR Scores: Trans World Airlines

| | 1997 | 1996 | 1995 | 1994 | 1993 | 1992 | 1991 |
|---|---|---|---|---|---|---|---|
| January | -0.270 | -0.347 | -0.324 | -0.389 | -0.297 | -0.470 | -0.470 |
| February | -0.222 | -0.316 | -0.280 | -0.373 | -0.307 | -0.436 | -0.434 |
| March | -0.237 | -0.316 | -0.281 | -0.355 | -0.289 | -0.450 | -0.426 |
| April | -0.217 | -0.273 | -0.291 | -0.275 | -0.257 | -0.455 | -0.420 |
| May | -0.201 | -0.275 | -0.305 | -0.233 | -0.272 | -0.475 | -0.481 |
| June | -0.211 | -0.278 | -0.291 | -0.264 | -0.251 | -0.489 | -0.456 |
| July | -0.163 | -0.315 | -0.298 | -0.333 | -0.315 | -0.316 | -0.454 |
| August | -0.154 | -0.310 | -0.341 | -0.310 | -0.320 | -0.332 | -0.436 |
| September | -0.136 | -0.305 | -0.313 | -0.276 | -0.322 | -0.288 | -0.446 |
| October | -0.182 | -0.296 | -0.292 | -0.288 | -0.268 | -0.279 | -0.409 |
| November | -0.186 | -0.284 | -0.292 | -0.285 | -0.255 | -0.384 | -0.373 |
| December | -0.209 | -0.312 | -0.329 | -0.299 | -0.275 | -0.400 | -0.408 |
| Average | -0.199 | -0.302 | -0.303 | -0.307 | -0.286 | -0.398 | -0.435 |

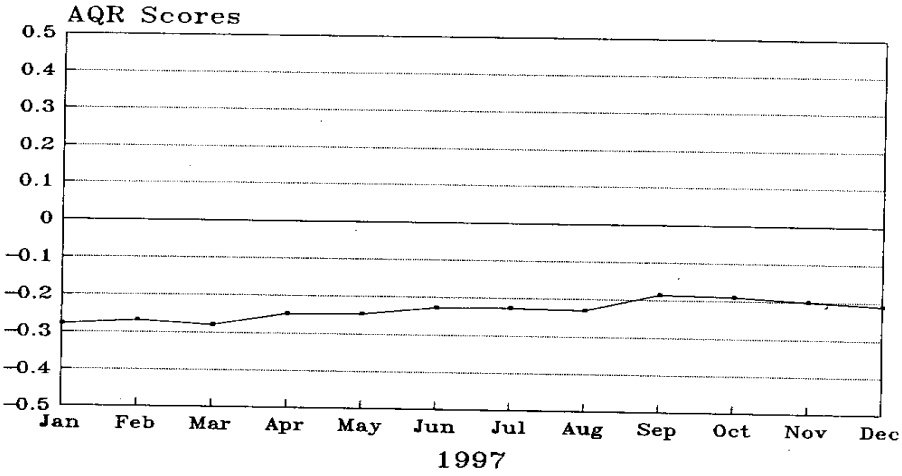
# AIRLINE QUALITY RATING

## TRANS WORLD 1991 - 1997



# AIRLINE QUALITY RATING

## US AIRWAYS – 1997

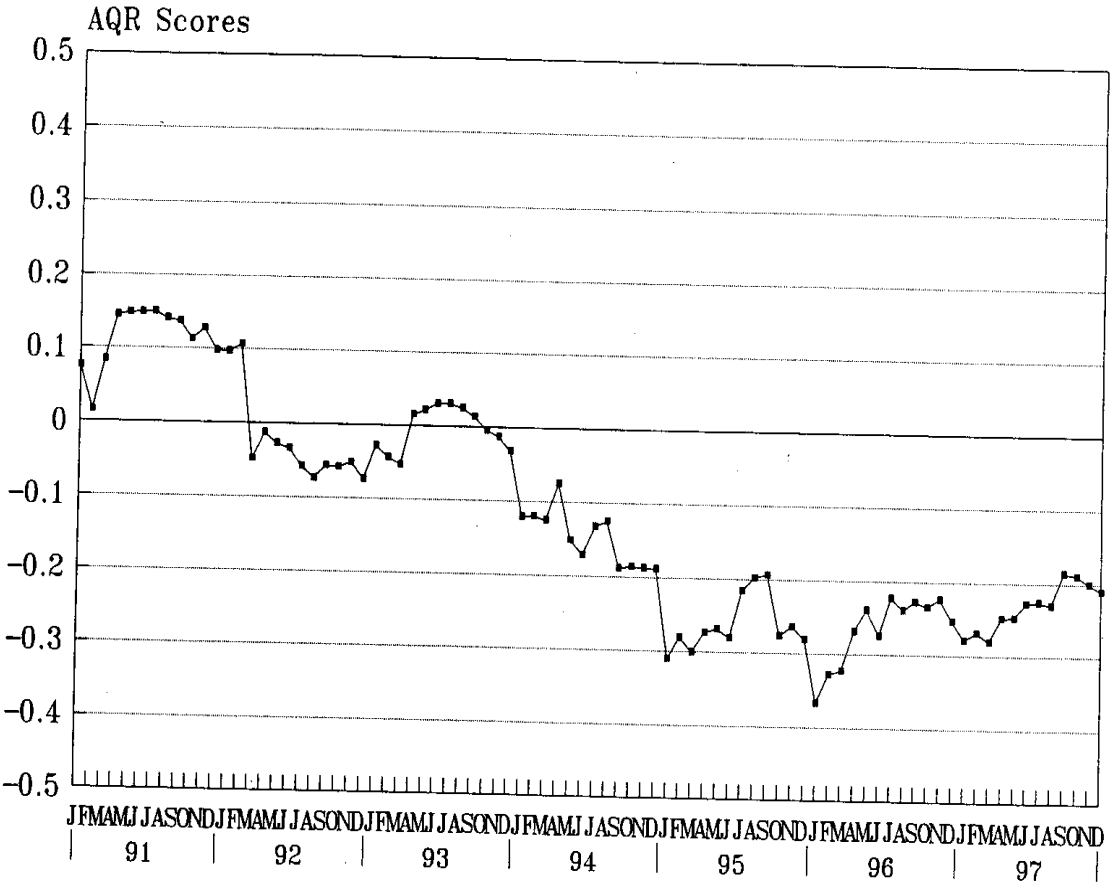



Monthly AQR Scores: US Airways

| | 1997 | 1996 | 1995 | 1994 | 1993 | 1992 | 1991 |
|---|---|---|---|---|---|---|---|
| January | -0.279 | -0.367 | -0.310 | -0.121 | -0.028 | 0.097 | 0.075 |
| February | -0.270 | -0.328 | -0.281 | -0.120 | -0.043 | 0.107 | 0.015 |
| March | -0.280 | -0.323 | -0.301 | -0.125 | -0.053 | -0.048 | 0.084 |
| April | -0.248 | -0.269 | -0.274 | -0.075 | 0.015 | -0.013 | 0.145 |
| May | -0.247 | -0.239 | -0.269 | -0.152 | 0.022 | -0.027 | 0.148 |
| June | -0.228 | -0.275 | -0.280 | -0.172 | 0.031 | -0.033 | 0.149 |
| July | -0.226 | -0.223 | -0.216 | -0.132 | 0.031 | -0.058 | 0.150 |
| August | -0.230 | -0.239 | -0.198 | -0.125 | 0.025 | -0.073 | 0.141 |
| September | -0.186 | -0.228 | -0.194 | -0.188 | 0.014 | -0.056 | 0.138 |
| October | -0.189 | -0.234 | -0.276 | -0.186 | -0.005 | -0.058 | 0.113 |
| November | -0.200 | -0.224 | -0.264 | -0.187 | -0.013 | -0.051 | 0.128 |
| December | -0.210 | -0.253 | -0.281 | -0.188 | -0.032 | -0.073 | 0.098 |
| Average | -0.233 | -0.267 | -0.262 | -0.148 | -0.003 | -0.024 | 0.115 |

# AIRLINE QUALITY RATING

## US AIRWAYS 1991 - 1997



# APPENDIX

## Detail of Frequently Cited Airline Performance Factors

As always, consumer interest remains high regarding such issues as mishandled baggage and on-time performance. Since these factors are part of the AQR calculations, it is useful to provide more complete data in 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 1997 regarding mishandled 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, mishandled/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 gain a perspective on issues of interest in the airline industry.

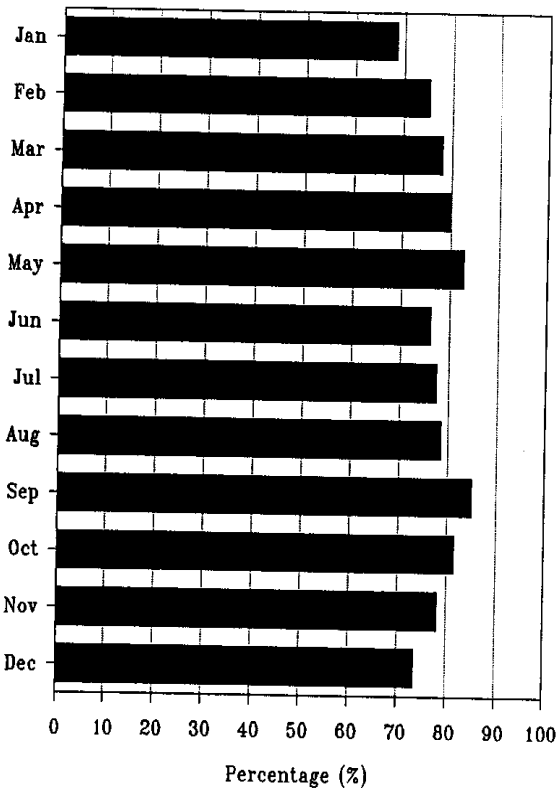
The final pages of this report restate the Airline Quality Rating factor definitions for reference and clarity.

## 1997 On-Time Arrival Percentage by Month for U.S. Major Airlines

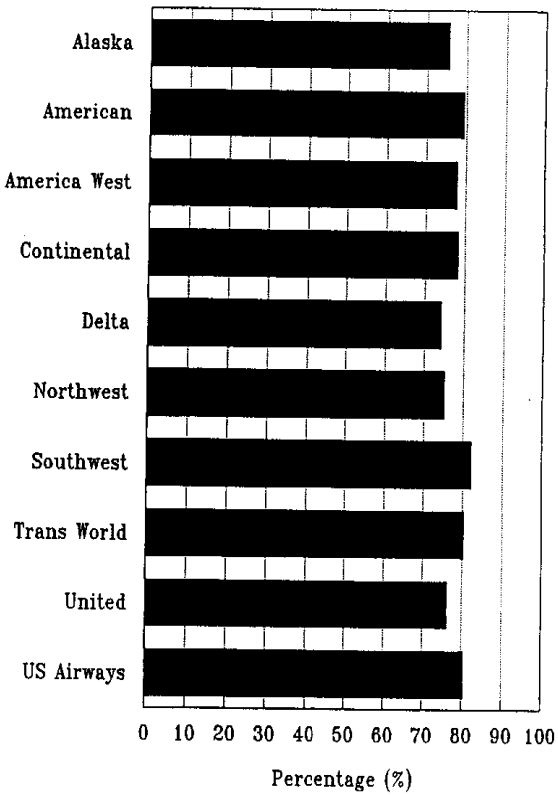
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Airline Average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Alaska** | .718 | .752 | .811 | .807 | .872 | .811 | .732 | .696 | .743 | .727 | .737 | .647 | .754 |
| **American** | .683 | .726 | .778 | .779 | .851 | .779 | .793 | .845 | .884 | .816 | .831 | .751 | .793 |
| **America West** | .673 | .787 | .788 | .778 | .817 | .811 | .803 | .754 | .843 | .814 | .758 | .695 | .777 |
| **Continental** | .721 | .794 | .778 | .795 | .790 | .752 | .787 | .798 | .839 | .807 | .777 | .750 | .782 |
| **Delta** | .676 | .711 | .748 | .756 | .754 | .676 | .717 | .760 | .827 | .802 | .739 | .729 | .741 |
| **Northwest** | .612 | .693 | .677 | .784 | .830 | .763 | .761 | .763 | .814 | .825 | .762 | .722 | .751 |
| **Southwest** | .705 | .813 | .847 | .842 | .867 | .819 | .852 | .820 | .886 | .824 | .818 | .750 | .820 |
| **Trans World** | .658 | .762 | .775 | .838 | .850 | .840 | .852 | .834 | .898 | .866 | .784 | .680 | .803 |
| **United** | .626 | .735 | .801 | .816 | .834 | .733 | .730 | .738 | .837 | .769 | .786 | .736 | .762 |
| **US Airways** | .769 | .785 | .807 | .806 | .861 | .770 | .771 | .796 | .862 | .868 | .783 | .766 | .804 |
| **Monthly Avg.** | .684 | .752 | .781 | .798 | .828 | .761 | .775 | .786 | .850 | .815 | .782 | .735 | .779 |

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

## 1997 On-Time Arrival
Monthly Averages for Major Airlines




## On-Time Arrival
1997 Averages for Major Airlines



## 1997 Mishandled Baggage[1] by Month for U.S. Major Airlines

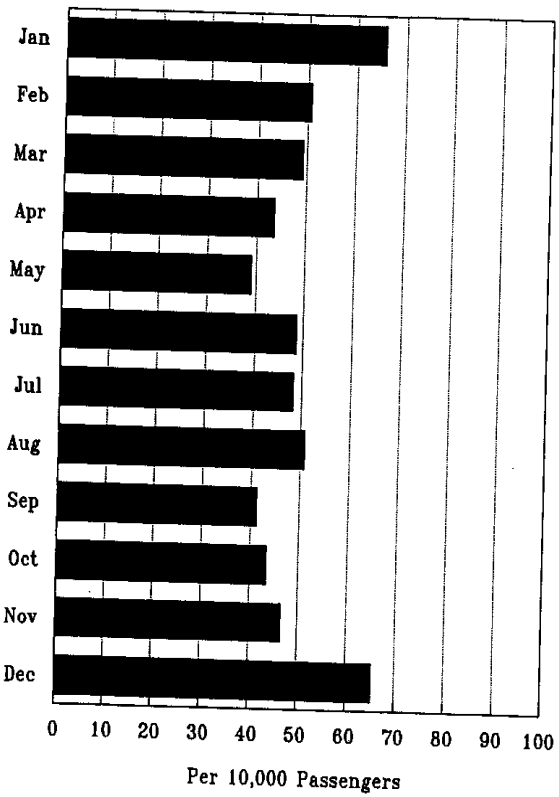
| | Jan | Feb | Mar | Apr | May[2] | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Airline Average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Alaska** | 95.0 | 69.9 | 75.8 | 57.6 | 57.2 | 74.9 | 83.6 | 78.5 | 65.2 | 51.6 | 54.8 | 86.4 | 71.9 |
| **American** | 63.3 | 49.4 | 45.6 | 47.2 | 39.2 | 54.8 | 51.2 | 48.7 | 35.9 | 42.4 | 38.0 | 63.6 | 48.7 |
| **America West** | 49.8 | 33.0 | 34.2 | 29.4 | 26.9 | 31.3 | 30.7 | 39.7 | 26.7 | 28.2 | 30.0 | 43.1 | 33.9 |
| **Continental** | 52.4 | 37.2 | 37.0 | 31.8 | 28.7 | 38.4 | 35.8 | 38.5 | 30.1 | 34.1 | 35.2 | 52.4 | 37.8 |
| **Delta** | 56.8 | 52.3 | 45.5 | 42.7 | 40.7 | 42.7 | 42.0 | 43.9 | 40.4 | 41.0 | 43.8 | 52.4 | 45.4 |
| **Northwest** | 79.3 | 57.2 | 62.9 | 47.7 | 42.1 | 59.6 | 57.7 | 61.5 | 50.2 | 48.0 | 64.9 | 89.1 | 60.5 |
| **Southwest** | 46.2 | 33.8 | 35.6 | 33.4 | 32.6 | 37.3 | 37.0 | 41.7 | 35.5 | 36.5 | 39.9 | 58.0 | 39.2 |
| **Trans World** | 88.3 | 61.5 | 61.7 | 40.9 | 45.8 | 44.6 | 44.9 | 49.5 | 36.7 | 44.0 | 55.4 | 82.0 | 54.4 |
| **United** | 95.0 | 67.9 | 66.8 | 55.1 | 48.1 | 63.6 | 64.1 | 69.8 | 54.1 | 61.2 | 60.8 | 92.0 | 67.0 |
| **US Airways** | 50.3 | 45.1 | 42.0 | 41.9 | 32.2 | 41.8 | 43.3 | 45.8 | 37.9 | 37.3 | 42.5 | 45.4 | 42.4 |
| **Monthly Avg.** | 65.7 | 50.7 | 49.2 | 43.5 | 39.0 | 48.6 | 48.2 | 50.9 | 41.2 | 43.4 | 46.6 | 65.3 | 49.6 |

[1] Figures shown are per 10,000 passengers.

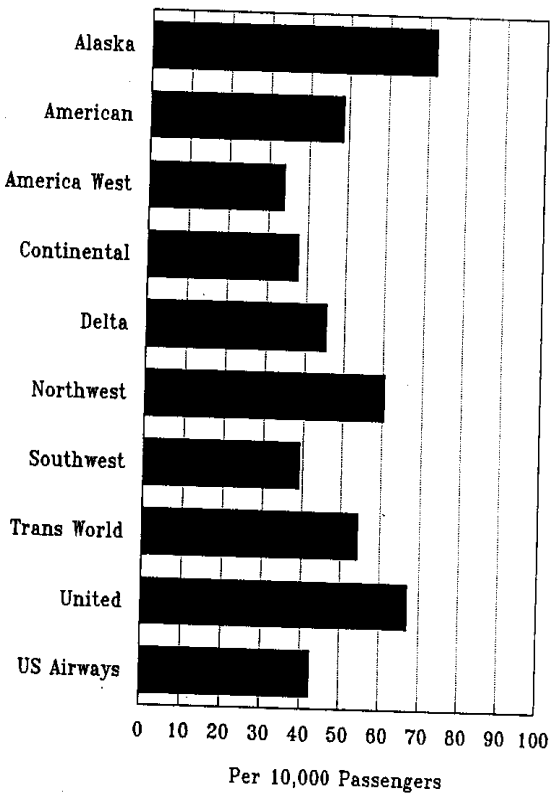
[2] Figures for May, 1997 exclude mishandled baggage reports for a two week period during which the Federal Aviation Administration conducted a bag match security test.

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

## 1997 Mishandled Baggage
Monthly Averages for Major Airlines




## Mishandled Baggage
1997 Averages for Major Airlines



## 1997 Total Complaints[1] to Department of Transportation by Consumers by Month for U.S. Major Airlines

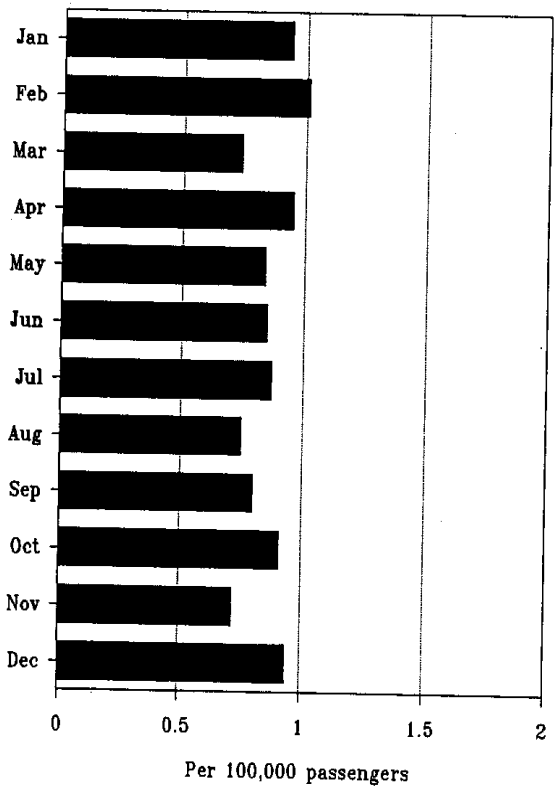
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Airline Average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Alaska** | 1.40 | 0.46 | 0.48 | 0.30 | 0.59 | 0.18 | 0.83 | 0.47 | 0.83 | 1.07 | 0.42 | 0.75 | 0.63 |
| **American** | 1.06 | 1.32 | 0.91 | 1.33 | 1.22 | 1.23 | 0.90 | 0.96 | 0.78 | 1.07 | 0.71 | 1.23 | 1.06 |
| **America West** | 2.00 | 2.55 | 1.45 | 1.38 | 1.10 | 1.24 | 1.30 | 1.08 | 1.65 | 2.23 | 0.88 | 1.50 | 1.51 |
| **Continental** | 0.86 | 0.93 | 0.55 | 1.12 | 0.61 | 0.71 | 0.67 | 0.72 | 0.66 | 0.69 | 0.93 | 0.80 | 0.77 |
| **Delta** | 0.73 | 0.55 | 0.49 | 0.72 | 0.69 | 0.66 | 0.79 | 0.52 | 0.65 | 0.66 | 0.53 | 0.71 | 0.64 |
| **Northwest** | 1.53 | 1.04 | 1.08 | 1.59 | 1.11 | 1.31 | 1.60 | 1.43 | 1.62 | 1.84 | 1.15 | 1.36 | 1.39 |
| **Southwest** | 0.48 | 0.56 | 0.25 | 0.25 | 0.25 | 0.23 | 0.35 | 0.19 | 0.22 | 0.33 | 0.13 | 0.28 | 0.28 |
| **Trans World** | 0.96 | 1.13 | 0.76 | 0.95 | 0.87 | 0.71 | 0.93 | 0.66 | 0.66 | 0.70 | 0.49 | 1.19 | 0.83 |
| **United** | 0.96 | 1.51 | 0.88 | 0.93 | 0.77 | 0.88 | 0.78 | 0.70 | 0.99 | 0.95 | 1.12 | 1.09 | 0.95 |
| **US Airways** | 0.60 | 0.72 | 0.83 | 0.81 | 1.09 | 0.90 | 0.89 | 0.78 | 0.47 | 0.58 | 0.69 | 0.84 | 0.78 |
| **Monthly Avg.** | 0.94 | 1.01 | 0.74 | 0.95 | 0.84 | 0.85 | 0.87 | 0.75 | 0.80 | 0.91 | 0.72 | 0.94 | 0.86 |

[1] Figures shown are per 100,000 passengers.

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

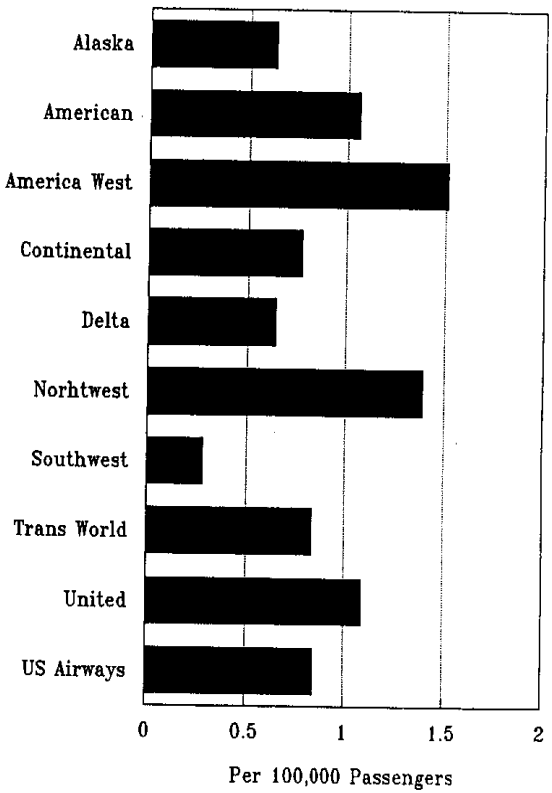
# 1997 Consumer Complaints

Monthly Averages for Major Airlines




# Consumer Complaints

1997 Averages for Major Airlines



## 1996 Involuntary Denied Boardings[1] by Quarter for U.S. Major Airlines

| | 1st Quarter | 2nd Quarter | 3rd Quarter | 4th Quarter | 1996 Average |
|---|---|---|---|---|---|
| **Alaska** | 2.42 | 2.68 | 1.04 | 3.12 | 2.25 |
| **American** | 0.49 | 0.36 | 0.76 | 1.56 | 0.79 |
| **America West** | 2.23 | 1.70 | 2.05 | 11.31 | 4.36 |
| **Continental** | 0.36 | 0.11 | 0.09 | 0.21 | 0.19 |
| **Delta** | 1.68 | 1.16 | 0.95 | 1.43 | 1.30 |
| **Northwest** | 0.52 | 0.59 | 0.51 | 0.61 | 0.56 |
| **Southwest** | 2.47 | 2.99 | 1.49 | 2.64 | 2.39 |
| **Trans World** | 1.03 | 0.55 | 1.09 | 0.84 | 0.87 |
| **United** | 0.81 | 0.46 | 0.56 | 0.35 | 0.54 |
| **US Airways** | 2.17 | 1.37 | 0.76 | 1.15 | 1.34 |
| **Industry Average** | 1.31 | 1.06 | 0.84 | 1.63 | 1.20 |

[1] Figures shown are per 10,000 passengers.

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

## 1997 Involuntary Denied Boardings[1] by Quarter for U.S. Major Airlines

| | 1st Quarter | 2nd Quarter[2] | 3rd Quarter | 4th Quarter | 1997 Average |
|---|---|---|---|---|---|
| **Alaska** | 3.56 | 2.35 | 1.91 | 3.53 | 2.78 |
| **American** | 1.35 | 0.63 | 0.25 | 0.34 | 0.63 |
| **America West** | 3.09 | 1.54 | 1.69 | 1.60 | 1.98 |
| **Continental** | 0.13 | 0.14 | 0.07 | 0.07 | 0.10 |
| **Delta** | 2.23 | 1.85 | 1.00 | 1.04 | 1.53 |
| **Northwest** | 0.73 | 0.70 | 0.43 | 0.29 | 0.53 |
| **Southwest** | 1.98 | 2.79 | 2.29 | 1.56 | 2.16 |
| **Trans World** | 1.77 | 1.62 | 0.71 | 1.18 | 1.30 |
| **United** | 0.66 | 0.35 | 0.50 | 0.48 | 0.49 |
| **US Airways** | 1.59 | 0.92 | 0.39 | 0.35 | 0.81 |
| **Industry Average** | 1.51 | 1.20 | 0.80 | 0.78 | 1.06 |

[1] Figures shown are per 10,000 passengers.
[2] Figures for May, 1997 exclude passenger enplanement reports for a two week period duirng which the FAA conducted a bag match security test.

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

# Some Interesting Facts About U.S. Airlines

Approximately 503 million people boarded one of the ten major U.S. domestic carriers in 1997. On average, these carriers had about 15,189 flights per month. This translates to about 1.38 million people flying on the major carriers on any given day during 1997. On average then, about 57,000 people were in a jet in the air over the U.S. at any given hour of the day or night.

## Mishandled Baggage:

Your chance of having a bag mishandled or 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 mishandled. Most bags are returned to the traveler within 48 hours. Only a very few are completely lost and not returned.

The months when most baggage was reported mishandled in 1997: January and December.
The months when the fewest bags are reported mishandled in 1997: May, April, September, and October.

Airlines that mishandled bags most often in 1997: Alaska Airlines and United.
Airlines that mishandled the fewest bags in 1997: America West, Continental, and Southwest.

## On-Time Arrival:

On-time arrivals are affected by many uncontrollable factors. When just the more controllable elements are considered, the U.S. major carriers maintained a 77.9% on-time arrival record for 1997. This was slightly better than the 74.2% on-time arrival record for the industry in 1996.

Worst on-time arrival performers for 1997: Delta (74.1%) and Northwest (75.1%).
The best on-time arrival performers in 1997: Southwest (82.0%), US Airways (80.4%), and Trans World (80.3%).

The most troublesome months to fly in 1997 (ie. lowest on-time arrival performance for the industry): January (68.4%) and December (73.5%).
The most successful on-time arrival months for the industry in 1997: September (85.0%), May (82.8%), and October (81.5%).

## Being Bumped From a Flight (Involuntary Denied Boardings):

Across the industry, 1.06 passengers per 10,000 boardings were bumped from their flight involuntarily in 1997.

Airlines most likely to involuntarily bump people in 1997: Alaska Airlines (2.78), Southwest (2.16), and America West (1.98).
Airlines least likely to involuntarily bump a passenger in 1997: Continental (0.10).

## Consumer Complaints:

On average, the major carriers experienced 0.86 consumer complaints per 100,000 passengers for 1997. The volume of complaints in 1997 represents a 20% increase in complaints over 1996, with the biggest increases in the months of December (up 67%) and April (up 43%). These complaints represent a wide range of areas such as cancellations, delays, oversales, reservation and ticketing problems, fares, refunds, customer treatment, unfair advertising, and other general problems.

The airlines with the most complaints per passenger served in 1997: America West (1.51), Northwest (1.39) and American (1.06).
The airline with the fewest complaints per passenger served in 1997: Southwest (0.28)

It seems that February was the month with the most complaints filed (1.01) and that November (0.72), March (0.74), and August (0.75) registered the fewest complaints per passenger served for the major carriers.

## Airline Safety:

In 1997, major airlines (Part 121) experienced 14 accidents with one death. The only fatality in the domestic operations of major airlines for 1997, was a ground crew member for Delta Airlines. In 1996, the major airlines experienced 22 accidents and 232 deaths (this does not reflect the 110 fatalities in the Valuejet accident since it is not considered a major carrier). For 1995, major airlines experienced 19 accidents and 3 deaths. In 1994, these airlines experienced 20 accidents and 239 deaths. As can be seen the year to year statistics vary greatly.

National and Regional carriers (Part 135) registered 46 fatalities in 1997, with 29 of these fatalities occurring on the Comair Airlines accident in January, 1997. In 1996 this group of carriers experienced only one fatal crash with 14 victims.

General aviation accident numbers were lower in 1997 (1,854) than in 1996 (1,905). Even with the lower overall number of accidents, the number of fatalities were higher in 1997 (646) than in 1996 (631). The 1997 fatalities are the second lowest in 15 years. Flight hours by general aviation pilots is estimated at 24.7 million for 1997.

## 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 1998 report, we have a seven 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 operated within 15 minutes of the scheduled 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 arriving 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 INVOLUNTARY 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 reports to the carriers of mishandled baggage can be obtained from the U.S. Department of Transportation's *Air Travel Consumer Report*. According to DOT, a mishandled bag includes claims for lost, damaged, delayed, or pilfered baggage. 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 major 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.