

# Airline Quality Rating 2023

The 33rd Year Reporting Airline Performance

A night view of an airport runway with bright lights and a central light tower. The runway is illuminated with a series of lights, and the central light tower is a prominent feature. The background shows the airport terminal and other buildings, all lit up at night.

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## **ABOUT THE AUTHORS**

The Airline Quality Rating Report is a product of academic research from co-authors Dr. Dean Headley and Dr. Brent Bowen. The research originated at the W. Frank Barton School of Business, Wichita State University in Wichita, Kansas.

Dr. Bowen and Dr. Headley's research on the development of the national Airline Quality Rating (AQR) is viewed by more than 75 million people each year and is annually featured by national news outlets such as ABC's Good Morning America, CNN, NBC's Today Show, C-SPAN, USA Today, The Associated Press, The Wall Street Journal, Aviation Week and Space Technology, the network evening news shows and in numerous other national and international print and electronic media. Bowen and Headley have served as invited expert witnesses before the U.S. House of Representatives Committee on Government Operations and as invited speakers and panelists for such groups as the National Academy of Sciences/Transportation Research Board, Department of Transportation, and other congressional and executive panels.

Their body of research has been recognized with awards from the American Marketing Association, the American Institute of Aeronautics and Astronautics, the Travel and Transportation Research Association and others.

## **AIRLINE QUALITY RATING 2023**

### **Abstract**

The Airline Quality Rating (AQR) was developed and first announced in early 1991 as an objective method for assessing airline quality on combined multiple performance criteria. This current reporting, the Airline Quality Rating 2023, reflects monthly Airline Quality Rating scores for calendar year 2022. AQR scores for 2022 are based on 15 elements in four major areas that focus on airline performance aspects important to air travel consumers over the calendar year of 2022.

The Airline Quality Rating 2023 is a summary of data for U.S. airlines that are required to report performance by virtue of having at least 0.05% of domestic scheduled-service passenger revenue during 2022. Using the Airline Quality Rating system of weighted averages and performance data in the areas of on-time arrivals, involuntary denied boardings, mishandled baggage, and a combination of 12 customer complaint categories, the AQR reports airlines' comparative performance for the calendar year of 2022. This report contains a summary of the AQR methodology and data that tracks comparative performance quality for domestic airline operations for the 12-month period of 2022 and the industry. Also, comparative Airline Quality Rating data for 2021 are included, where available, to provide historical perspective regarding performance quality in the industry.

### **The Airline Quality Rating System**

Many quality ratings available in the past have relied on subjective surveys of consumer opinion that were infrequently collected. This subjective approach yields a quality rating that is essentially non-comparable from survey to survey for any specific airline. Timeliness of survey-based results can be a problem in the fast-paced airline industry as well. 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 that had not been used previously in the airline industry. The method relies on utilizing published, publicly available data that reports actual airline performance on critical quality criteria important to consumers and combines them into a rating system. The result is a rating for individual airlines with interval scale properties that is comparable across airlines. The Airline Quality Rating is a weighted average of multiple elements (see Table 1) important to consumers when judging the quality of airline services. Elements considered for inclusion in the rating scale were screened to meet two basic criteria: 1) An element must be obtainable from published data sources for each airline; and 2) An element must have relevance to consumer concerns regarding airline performance quality. Data for the elements used in calculating the ratings represent performance aspects (on-time arrival, mishandled baggage, involuntary denied boardings and 12 customer complaint areas) of airlines that are important to consumers. All the elements are reported in the *Air Travel Consumer Report* maintained by the U.S. Department of Transportation. Weights were originally 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. Each weight and element were assigned a plus or minus sign to reflect the nature of impact for that criterion on a consumer's perception of quality. For instance, the criterion of on-time arrival performance is included as a positive element because it is reported in terms of on-time successes, suggesting that a higher number is favorable to consumers. The weight for this criterion is high due to the importance most consumers place on this aspect of airline service. Conversely, the criterion that includes mishandled baggage is included as a negative element and is reported in terms of mishandled bags per 100 checked bags (new metric for 2022 data), suggesting that a higher number is unfavorable to consumers. Because having baggage arrive with passengers is important to consumers, the weight for this criterion is also high. Weights and positive/negative signs are independent of one another. Weights reflect importance of the criteria in consumer decision-making, while signs reflect the direction of impact that the criteria should have on the consumer's rating of airline performance quality. When all criteria, weights and impacts are combined for an airline over the year, a single interval scaled value is obtained. This value is comparable across airlines. In the spring of 2002, a nationwide survey of frequent flyers was conducted that allowed a revisiting of the weighting for the AQR elements. Analysis of the sample of 766 opinions showed no appreciable difference in the relative weights for the AQR elements. To maintain comparability across the years, the weights have been held constant.

The Airline Quality Rating criteria and the weighted average methodology allow a focused comparison of domestic airline performance. Unlike other consumer opinion approaches that have relied on consumer surveys and subjective opinion, the AQR continues to use a mathematical formula that considers multiple weighted objective criteria to arrive at a single comparable rating for airline industry performance. The Airline Quality Rating provides both consumers and industry watchers a means for monitoring comparative quality for each airline on a timely basis, using

objective, performance-based data. Over its 33-year history, the Airline Quality Rating has often been cited as an industry standard for comparing airline performance. Currently, the AQR stands as the longest regularly published rating available for airline performance. With the continued global trend in airline operations alliances, the argument becomes even stronger for the Airline Quality Rating to be used as a standard method for comparing the quality of airline performance for international operations as well.

**Table 1**

**AIRLINE QUALITY RATING CRITERIA, WEIGHTS AND IMPACT**

<b>CRITERIA</b>	<b>WEIGHT</b>	<b>IMPACT (+/-)</b>
<b>OT On-Time</b>	8.63	<b>+</b>
<b>DB Denied Boardings</b>	8.03	<b>-</b>
<b>MB Mishandled Baggage</b>	7.92	<b>-</b>
<b>CC Customer Complaints</b>	7.17	<b>-</b>
Flight Problems		
Oversales		
Reservations, Ticketing, and Boarding		
Fares		
Refunds		
Baggage		
Customer Service		
Disability		
Advertising		
Discrimination		
Animals		
Other		

Data for all criteria is drawn from the U.S. Department of Transportation's monthly *Air Travel Consumer Report*. (<http://dot.gov/airconsumer/>)

The formula for calculating the AQR score is:

$$\text{AQR} = \frac{(+8.63 \times \text{OT}) + (-8.03 \times \text{DB}) + (-7.92 \times \text{MB}) + (-7.17 \times \text{CC})}{(8.63 + 8.03 + 7.92 + 7.17)}$$

## Observations and comments related to AQR criteria performance for 2022:

The impact of the novel coronavirus on the U.S. domestic air travel passenger volume has all but disappeared. Passenger volume is back to pre-pandemic levels and system performance reflects the negative impact of this return to higher volumes of travelers. Each airline has been challenged to handle an uncertain situation and adapt its respective offerings to fast-changing circumstances.

Some airlines adapted quicker than others and the AQR numbers give some insight into this adaptive timeline. The criterion that most affected the AQR performance scores in 2022 for all airlines is a dramatic increase in customer complaints. Most customer complaints in 2022 were for issues involving flight problems and refunds. Customer concern regarding refunds continued as a main concern from 2021 although at a lower level in 2022.

All AQR criteria, on-time performance, involuntary denied boardings and mishandled baggage and customer complaints all had worse industry performance scores in 2022. As passenger volumes began to increase during 2022, performance declined. As the air travel system returns to pre-pandemic volumes the number of enplaned passengers and their enplaned baggage puts pressure on a system that is struggling to recover to meet demand. The air travel system does, however, continue to deliver safe travel for the flying public.

Some observations regarding the AQR criteria are shown below.

- Delta Airlines had the best on-time performance (82.5%) for 2022.
- Allegiant had the worst on-time performance (63.4%) for 2022.
- No airline improved their on-time arrival performance in 2022. Only one airline of the ten airlines rated had an on-time arrival percentage of over 80%. On-time for 2022 by the industry was 73.0% compared to 79.1% in 2021.
- Frontier had the highest involuntary denied boardings rate at 2.66 per 10,000 passengers.
- Allegiant, Delta, and Hawaiian had the lowest involuntary denied boardings rates at 0.00 per 10,000 passengers.
- None of the rated airlines improved their denied boardings rate in 2022. Three airlines had the same rate as in 2021. Allegiant (0.00), Delta (0.00), Hawaiian (0.00), United (0.01) and JetBlue (0.06) are clearly the industry leaders in avoiding denied boarding incidents. Industry performance was noticeably worse in 2022 (0.42) per 10,000 passengers than it was in 2021 (0.17).
- Clarification is needed regarding a change in the way mishandled bags are reported in the Air Travel Consumer Report. Starting with the January 2022 Air Travel Consumer Report, the ratio used for measuring the rate of mishandled bags was adjusted to reflect a more useful number for the consumer. The new metric for 2022 reports mishandled baggage as a ratio of mishandled bags based per 100 enplaned (checked) bags. In all data years prior to 2020, mishandled bags were reported as a ratio of mishandled bags

per 1,000 passengers. For data years 2020 and 2021, the ratio of the number of mishandled bags per 1,000 checked (enplaned) bags was used. Starting in January of 2022 the ratio of the number of mishandled bags per 100 enplaned (checked) bags is used. This new metric gives consumers a better assessment of the risk they face when checking a bag. It also provides a more accurate measure of the airlines' performance relative to the number of bags entrusted to their handling. It does, however, make comparison of 2022 AQR results non-comparable to all earlier published AQR results. For comparison purposes, results shown in this release and the AQR report reflect the 2021 values for mishandled baggage using the new ratio.

- Allegiant had the best baggage handling performance under the new measurement approach (0.16 mishandled bags per 100 checked bags).
- American had the worst baggage handling performance (0.94 mishandled bags per 100 checked bags).
- The mishandled baggage rate for the industry changed from 0.44 per 100 checked bags in 2021 to 0.56 per 100 checked bags in 2022.
- Delta had the lowest consumer complaint rate (2.66 per 100,000 passengers).
- Frontier had the highest consumer complaint rate (20.26 per 100,000 passengers).
- The industry rate for customer complaints per 100,000 passengers increased from 4.51 in 2021 to 7.39 in 2022. All but two airlines (Hawaiian and Spirit) had higher numbers of customer complaints in 2022 than 2021. Most complaints in 2022 to U.S. Department of Transportation were regarding flight problems (31.7%) and refunds (25.7%). For perspective, in 2021 refunds were 59.1% of complaints filed and flight problems accounted for 12.6% of complaints. Complaints in 2022 regarding baggage (15.5%), and reservations, ticketing, and boarding (10.0%) were also of notable concern to the flying public.
- Enplaned passengers for the ten rated airlines in 2021 was 556,404,801. In 2022 the number was 724,614,031. This 30% increase in passenger volume from 2021 to 2022 was not unexpected. In 2022 passenger volume returned as the pandemic became more manageable and pent-up travel demand flourished. Passenger volume for the 10 rated airlines in 2021 at 540,404,801 was an 83% increase over 2020 volumes. With increased passenger volumes in 2022 all industry AQR performance elements declined. How quickly each airline addresses their performance in critical areas will tell the story of each airlines AQR score as passenger volume returns.

## AQR Criteria Overview 2021 and 2022 by Airline

	OT		DB		MB*		CC	
	2021	2022	2021	2022	2021	2022	2021	2022
<b>Industry</b>	<b>79.1%</b>	<b>73.0%</b>	<b>0.17</b>	<b>0.42</b>	<b>0.44</b>	<b>0.56</b>	<b>4.51</b>	<b>7.39</b>
<b>Alaska</b>	<b>81.2%</b>	<b>77.3%</b>	<b>0.05</b>	<b>0.11</b>	<b>0.64</b>	<b>0.75</b>	<b>2.11</b>	<b>2.88</b>
<b>Allegiant</b>	<b>68.3%</b>	<b>63.4%</b>	<b>0.00</b>	<b>0.00</b>	<b>0.17</b>	<b>0.16</b>	<b>4.66</b>	<b>7.85</b>
<b>American</b>	<b>80.5%</b>	<b>74.9%</b>	<b>0.20</b>	<b>0.38</b>	<b>0.83</b>	<b>0.94</b>	<b>3.46</b>	<b>5.41</b>
<b>Delta</b>	<b>87.8%</b>	<b>82.5%</b>	<b>0.00</b>	<b>0.00</b>	<b>0.47</b>	<b>0.55</b>	<b>1.29</b>	<b>2.66</b>
<b>Frontier</b>	<b>76.6%</b>	<b>66.1%</b>	<b>0.95</b>	<b>2.66</b>	<b>0.31</b>	<b>0.42</b>	<b>5.79</b>	<b>20.26</b>
<b>Hawaiian</b>	<b>90.1%</b>	<b>75.8%</b>	<b>0.00</b>	<b>0.00</b>	<b>0.23</b>	<b>0.38</b>	<b>3.69</b>	<b>3.58</b>
<b>Jet Blue</b>	<b>72.3%</b>	<b>64.6%</b>	<b>0.02</b>	<b>0.06</b>	<b>0.48</b>	<b>0.68</b>	<b>6.38</b>	<b>8.96</b>
<b>Southwest</b>	<b>75.8%</b>	<b>73.2%</b>	<b>0.33</b>	<b>0.56</b>	<b>0.37</b>	<b>0.54</b>	<b>1.36</b>	<b>6.75</b>
<b>Spirit</b>	<b>76.7%</b>	<b>73.0%</b>	<b>0.13</b>	<b>0.37</b>	<b>0.44</b>	<b>0.50</b>	<b>11.45</b>	<b>10.10</b>
<b>United</b>	<b>81.3%</b>	<b>79.0%</b>	<b>0.00</b>	<b>0.01</b>	<b>0.44</b>	<b>0.65</b>	<b>4.93</b>	<b>5.54</b>

**OT** = On-Time arrival percentage

**DB** = Denied Boardings (involuntary) per 10,000 passengers

**MB** = Mishandled Baggage per 100 checked bags

**CC** = Customer Complaints per 100,000 passengers

\*Mishandled baggage is reported as the number of mishandled bags per 100 checked bags starting in January 2022. Values shown here for 2021 data are based on the new metric for comparison. Mishandled Baggage (MB) values and AQR scores in AQR reports published for 2022 or earlier are based on the number of mishandled bags per 1000 enplaned passengers and should not be compared to current values.



## U.S Domestic Airlines

<u>Industry Performance</u>	<u>2022</u>	<u>2021</u>
OT On-Time Arrival (%)	73.0%	79.1%
DB Denied Boardings (per 10,000)	0.42	0.17
MB Mishandled Bags (per 100 checked)	0.56	0.44
CC Cust. Complaints (per 100,000)	7.39	4.51

<u>Best Performers</u>	<u>2022</u>	<u>2021</u>
OT On-Time Arrival	Delta (82.5%)	Hawaiian (90.1%)
DB Denied Boardings	Allegiant (0.00) Delta (0.00) Hawaiian (0.00) United (0.01) JetBlue (0.06)	Allegiant (0.00) Delta (0.00) Hawaiian (0.00) United (0.00) JetBlue (0.02)
MB Mishandled Bags	Allegiant (0.16)	Allegiant (0.17)
CC Customer Complaints	Delta (2.66)	Delta (1.29) Southwest (1.36)

<u>Worst Performers</u>	<u>2022</u>	<u>2021</u>
OT On-Time Arrival	Allegiant (63.4%)	Allegiant (68.3%)
DB Denied Boardings	Frontier (2.66)	Frontier (0.95)
MB Mishandled Bags	American (0.94)	American (0.83)
CC Customer Complaints	Frontier (20.26)	Spirit (11.45)

## Airline Quality Rating Scores 2022 - 2021

	2022 AQR Score	Rank	2021 AQR Score	Rank
<b>Alaska</b>	<b>-0.66</b>	<b>2</b>	<b>-0.43</b>	<b>3</b>
<b>Allegiant</b>	<b>-1.64</b>	<b>7</b>	<b>-0.91</b>	<b>6</b>
<b>American</b>	<b>-1.35</b>	<b>5</b>	<b>-0.82</b>	<b>5</b>
<b>Delta</b>	<b>-0.51</b>	<b>1</b>	<b>-0.17</b>	<b>1</b>
<b>Frontier</b>	<b>-5.17</b>	<b>10</b>	<b>-1.42</b>	<b>9</b>
<b>Hawaiian</b>	<b>-0.70</b>	<b>3</b>	<b>-0.65</b>	<b>4</b>
<b>JetBlue</b>	<b>-2.03</b>	<b>8</b>	<b>-1.37</b>	<b>8</b>
<b>Southwest</b>	<b>-1.60</b>	<b>6</b>	<b>-0.28</b>	<b>2</b>
<b>Spirit</b>	<b>-2.30</b>	<b>9</b>	<b>-2.52</b>	<b>10</b>
<b>United</b>	<b>-1.20</b>	<b>4</b>	<b>-1.00</b>	<b>7</b>
 <b>Industry</b>	 <b>-1.72</b>		 <b>-0.96</b>	

**NOTES:**

All AQR scores based on 2020 data or earlier are **not** comparable to scores based on 2021 or 2022 data. The metric for mishandled bags was changed from a base of 1000 enplaned bags to a base of 100 enplaned bags starting with the January 2022 data. This change renders the earlier AQR scores non-comparable due to the new metric. In this reporting the AQR scores based on 2021 and 2022 data use the new mishandled baggage metric. As an example, the industry AQR score for 2022 using the old metric would be -2.97 whereas the industry AQR score for 2022 using the new metric is -1.72.

### Overview of Complaints Received by the Department of Transportation for All U.S. Domestic Airlines by Complaint Category for 2022 and 2021

% of all Complaints Received		Number of Complaints Received	
2022	2021	2022	2021

<b>Flight Problems</b>	<b>31.7%</b>	<b>12.6%</b>	<b>24,647</b>	<b>6,316</b>
<b>Refunds</b>	<b>25.7%</b>	<b>59.1%</b>	<b>19,983</b>	<b>29,523</b>
<b>Baggage</b>	<b>15.5%</b>	<b>4.0%</b>	<b>12,007</b>	<b>1,996</b>
<b>Reservations, Ticketing, and Boarding</b>	<b>10.0%</b>	<b>8.1%</b>	<b>7,744</b>	<b>4,032</b>
<b>Fares</b>	<b>7.8%</b>	<b>8.2%</b>	<b>6,030</b>	<b>4,077</b>
<b>Customer Service</b>	<b>3.7%</b>	<b>3.8%</b>	<b>2,912</b>	<b>1,903</b>
<b>Disability</b>	<b>2.7%</b>	<b>2.8%</b>	<b>2,095</b>	<b>1,397</b>
<b>Other</b>	<b>1.0%</b>	<b>1.0%</b>	<b>599</b>	<b>281</b>
<b>Oversales</b>	<b>2.0%</b>	<b>1.0%</b>	<b>1,336</b>	<b>286</b>
<b>Discrimination</b>	<b>0.1%</b>	<b>0.1%</b>	<b>178</b>	<b>134</b>
<b>Advertising</b>	<b>0.1%</b>	<b>0.0%</b>	<b>125</b>	<b>45</b>
<b>Animals</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0</b>	<b>1</b>
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>77,656</b>	<b>49,991</b>

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

## **Airline Quality Rating Criteria Overview**

The individual criteria used to calculate AQR scores are summed up in four basic areas that reflect customer-oriented areas of airline performance. Definitions of the four areas used in this AQR 2023 (2022 data) are outlined below:

### **OT ON-TIME PERFORMANCE (+8.63)**

Regularly published data regarding on-time arrival performance is obtained from the U.S. Department of Transportation's monthly *Air Travel Consumer Report*. According to the DOT, a flight is counted "on time" if it is operated within 15 minutes of the scheduled time displayed in the carriers' Computerized Reservations System. Delays caused by mechanical problems are included as of January 1, 1995. Canceled and diverted operations are not considered on-time arrivals. The AQR calculations use the percentage of flights arriving on-time for each airline.

### **DB INVOLUNTARY DENIED BOARDINGS (-8.03)**

This criterion includes involuntary denied boardings. Data regarding denied boardings is obtained from the U.S. Department of Transportation's *Air Travel Consumer Report*. Data include the number of passengers who hold confirmed reservations and are involuntarily denied boarding on a flight that is oversold. These figures include only passengers whose oversold flight departs without them on board. The AQR uses the ratio of involuntary denied boardings per 10,000 passengers boarded.

### **MB MISHANDLED BAGGAGE REPORTS (-7.92)**

Regularly published data regarding consumer reports to the carriers of mishandled baggage is obtained from the U.S. Department of Transportation's *Air Travel Consumer Report*. According to the DOT, mishandled baggage includes checked bags that are lost, damaged, delayed and pilfered, as reported by or on behalf of the passenger, that were in the airline's custody for its reportable domestic nonstop scheduled passenger flights. The number of bags enplaned represents the total number of checked bags enplaned, including wheelchairs and scooters that were placed into the aircraft cargo compartment for any reportable domestic nonstop scheduled passenger flight. Data are reported by carriers regarding the rate of mishandled baggage reports per 100 checked bags (enplaned bags) and for the industry. The AQR ratio is based on the total number of reports each carrier received concerning lost, damaged, delayed or pilfered baggage per 100 checked bags.

### **CC CONSUMER COMPLAINTS (-7.17)**

The criteria of consumer complaints are made up of 12 specific complaint categories (outlined below) monitored by the U. S. Department of Transportation and reported monthly in the *Air Travel Consumer Report*. Consumers can file complaints with the DOT in writing, by telephone, via e-mail or in person. The AQR uses complaints about the various categories as part of the larger customer complaint criteria and calculates the consumer complaint ratio on the number of complaints received per 100,000 passengers flown for each airline.

## **CONSUMER COMPLAINT CATEGORIES**

### **Flight Problems**

Data are available by the total number of consumer complaints pertaining to cancellations, delays, or any other deviations from schedule, whether planned or unplanned for each airline.

**Oversales**

This complaint category includes all bumping problems, whether or not the airline complied with DOT oversales regulations. Data are available by the total number of consumer complaints pertaining to oversales for each airline.

**Reservations, Ticketing, and Boarding**

This category includes airline or travel agent mistakes made 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; and problems boarding the aircraft (except oversales). Data are available by the total number of consumer complaints pertaining to ticketing and boarding for each airline.

**Fares**

As defined by the DOT, consumer complaints regarding fares include incorrect or incomplete information about fares, discount fare conditions and availability, overcharges, fare increases and level of fares in general. Data are available for the total number of consumer complaints pertaining to fares for each airline.

**Refunds**

This category includes customer complaints about problems in obtaining refunds for unused or lost tickets, fare adjustments, or bankruptcies. Data are available by the total number of consumer complaints pertaining to refunds for each airline.

**Baggage**

Claims for lost, damaged, or delayed baggage; charges for excess baggage; carry-on problems; and difficulties with airline claim procedure are included in this category. Data are available by the total number of consumer complaints pertaining to baggage for each airline.

**Customer Service**

This category includes complaints about rude or unhelpful employees, inadequate meals or cabin service, treatment of delayed passengers, unsatisfactory seat assignment (non-disability) and problems with family seating. Data are available by the total number of consumer complaints pertaining to customer service for each airline.

**Disability**

This category includes complaints about civil rights by air travelers with disabilities. Data are available by the total number of consumer complaints pertaining to disabilities for each airline.

**Advertising**

These are complaints concerning advertising that is unfair, misleading, or offensive to consumers. Data are available by the total number of consumer complaints regarding advertising for each airline.

**Discrimination**

This category covers civil rights complaints by air travelers (other than disabilities); for example: complaints based on race, national origin, religion, etc.

**Animals**

This category tracks customer complaints about loss, injury, or death of an animal during air transport by an air carrier. Data are available by the total number of customer complaints regarding animals for each airline.

**Other**

Data regarding consumer complaints about frequent flyer programs, smoking, tours credit, cargo problems, security, airport facilities, claims for bodily injury, sexual assault/misconduct and other problems not classified above are included in this category. Data are available by the total number of consumer complaints regarding other problems for each airline.