

Airline Accident Rates

These accident rates are not safety ratings. There are many factors that contribute to the safety rating of an airline including, but not limited to, accident history, maintenance and operational procedures, types of training programs, age of fleet and specific routes flown.

In addition there are different ways to analyze past accident data including using number of hours flown, passenger miles completed or number of trips made. The accident rates below are based on only three basic parameters. Number of flights, the number of fatal accidents and the fatality rate of those accidents. The methodology is listed below the tables.

Aviation accidents are extremely rare, with the probability of a passenger being killed on a single flight at approximately eight million-to-one. If a passenger boarded a flight at random, once a day, everyday, it would statistically be over 21,000 years before he or she would be killed.

DISCLAIMER These accident rates should not be used to provide an assessment of an airline's safety profile or future risk of an accident. These rates are derived from past accidents and not an estimate or prediction of future risk. There are many additional factors in judging the safety of an air carrier which are not included here. These rates are not meant to endorse or condemn any particular airline or group of airlines nor are they intended to persuade or dissuade use of any particular airline. The accident rates and method of calculation of the accident rates are solely the opinion of this web site and the creator is not responsible for how this information is used and will not be held legally responsible for any consequences arising from the use of this information. There are numerous commercial organizations that provide complete and extensive safety ratings of commercial air carriers.

Data for 20 Years Jan 1989 - Dec 2008							
NORTH AMERICA							
Regional Rank	Airline	Million Flights	Fatal Events	Adj. Fatal Events	Last Fatal Accident	Accident Rate	Overall Rank 1 - 88
1	Delta Airlines	16.50	1	0.02	1996	-4.42	1
2	Southwest Airlines	15.78	0	0	None	-4.25	2
3	Northwest Airlines	10.91	1	0.18	1993	-2.76	3
4	Continental Airlines/Cont. Exp.	12.06	1	1.00	1991	-2.24	4
5	Air Canada	3.99	0	0	(1983)	-1.07	7
6	American Airlines	17.00	5	4.04	2001	-0.53	15
7	Alaska Airlines/Horizon Air	5.20	1	1.00	2000	-0.40	20
8	US Airways	13.40	5	3.26	1994	-0.35	21
9	Hawaiian Airlines	1.27	0	0	None	-0.34	22
10	American Eagle	11.20	3	2.72	1994	-0.29	27
11	United Airlines	13.66	6	3.42	2001	-0.26	32
12	JetBlue Airlines	0.92	0	0	None	-0.25	33
13	WestJet	0.87	0	0	None	-0.23	34
14	USAir Shuttle	0.85	0	0	None	-0.23	35
15	Midwest Airlines	0.75	0	0	(1985)	-0.20	38
16	ATA Airlines	0.57	0	0	None	-0.15	43
17	United Express	8.79	3	2.67	1996	0.30	64
18	AirTran Airways	1.84	1	1.00	1996	0.50	67
19	Comair	5.03	2	2.00	2006	0.65	70

EUROPE

Regional Rank	Airline	Million Flights	Fatal Events	Adj. Fatal Events	Last Fatal Accident	Accident Rate	Overall Rank 1-88
1	Lufthansa	7.88	1	0.02	1993	-2.10	5
2	British Airways	5.49	0	0	(1985)	-1.48	6
3	Iberia Airlines	3.73	0	0	(1985)	-1.00	9
4	KLM /KLM Cityhopper	2.81	1	0.09	1994	-0.67	11
5	SAS Scandinavian AL/SAS Norway	5.83	1	1.00	2001	-0.57	13
6	Finnair	1.98	0	0	(1963)	-0.53	16
7	RyanAir	1.96	0	0	None	-0.53	18
8	EasyJet	1.63	0	0	None	-0.44	19
9	Aer Lingus	1.25	0	0	(1968)	-0.34	23
10	Tap Air Portugal	1.09	0	0	(1977)	-0.29	28
11	Austrian Airlines	1.00	0	0	(1960)	-0.27	30
12	Air Europa	0.71	0	0	None	-0.19	40
13	Malev-Hungarian Airlines	0.64	0	0	(1977)	-0.17	42
14	Icelandair	0.55	0	0	(1951)	-0.15	44
15	JAT Yugoslavian Airways	0.38	0	0	(1973)	-0.10	46
16	Virgin Atlantic Airways	0.24	0	0	None	-0.06	52
17	British Midland	1.71	1	0.40	1989	-0.06	53
18	Transaero Airlines	0.15	0	0	None	-0.04	56
19	Ukraine International Airlines	0.12	0	0	None	-0.03	57
20	Alitalia	3.78	1	1.00	1990	-0.02	58
21	Air France	6.15	3	1.96	2000	0.31	65
22	Olympic Airways	1.71	1	1.00	1989	0.54	68
23	THY Turkish Airlines	1.86	2	1.70	2003	1.20	80
24	Aeroflot Russian Airlines	2.06	2	2.00	2008	1.45	81

ASIA - AUSTRALIA

Regional Rank	Airline	Million Flights	Fatal Events	Adj. Fatal Event	Last Fatal Accident	Accident Rate	Overall Rank 1-88
1	All Nippon Airways	3.88	0	0	(1971)	-1.04	8
2	Japan Air Lines	2.63	0	0	(1985)	-0.71	10
3	Qantas Airways	2.40	0	0	(1951)	-0.65	12
4	Hanin Airlines	1.22	0	0	None	-0.33	24
5	Air New Zealand	1.15	0	0	(1979)	-0.31	25
6	Cathy Pacific Airways	1.02	0	0	(1972)	-0.27	29
7	Malaysia Airlines	3.19	1	0.65	1995	-0.21	36
8	Virgin Blue	0.73	0	0	None	-0.20	39

9	Philippine Air Lines	0.92	2	0.07	1994	-0.18	41
10	Air India	0.48	0	0	(1985)	- 0.13	45
11	Dragon Air	0.32	0	0	None	-0.09	49
12	Air China	2.49	1	0.77	2002	0.10	59
13	Asiana Airlines	1.52	1	0.62	1993	0.21	63
14	China Southern Airlines	3.51	2	1.51	1997	0.57	69
15	Korean Air	2.41	3	1.30	1997	0.65	71
16	Garuda Indonesian	1.52	3	1.16	2007	0.75	73
17	Thai Airways International	1.78	2	1.45	1998	0.97	76
18	Singapore Airlines/SilkAir	1.34	2	1.50	2000	1.14	78
19	China Eastern Airlines	2.52	3	1.86	2004	1.18	79
20	Indian Air Lines	1.70	4	2.1	1999	1.64	88
21	Pakistan International Airlines	1.18	3	3.00	2006	2.68	86
22	China Airlines	0.76	5	4.72	2002	4.52	88

SOUTH/CENTRAL AMERICA - MEXICO-CARIBBEAN

Regional Rank	Airline	Million Flights	Fatal Events	Adj. Fatal Event	Last Fatal Accident	Accident Rate	Overall Rank 1-88
1	Aeromexico	2.08	0	0	(1986)	-0.56	14
2	Mexicana Airlines	1.97	0	0	(1986)	- 0.53	17
3	Aerolíneas Argentinas	0.99	0	0	(1970)	-0.27	31
4	Air Jamacia	0.38	0	0	None	-0.10	47
5	Varig	2.35	1	0.75	1989	0.12	60
6	TACA International Airlines	0.44	2	.27	2008	0.15	61
7	Lan Chile Airlines	0.54	2	0.37	1991	0.16	62
8	GOL Transportes Aereo	0.94	1	1.00	2006	0.75	72
9	Avianca Colombian Airline	1.20	2	1.43	1990	1.11	77
10	TAM	2.04	4	2.06	2007	1.51	82
11	Cubana	0.24	7	4.23	1999	4.16	87

AFRICA - MIDDLE EAST

Regional Rank	Airline	Million Flights	Fatal Events	Adj. Fatal Event	Last Fatal Accident	Accident Rate	Overall Rank 1-88
1	South African Airways	1.11	0	0	(1987)	-0.30	26
2	Emirates Airline	0.76	0	0	None	-0.20	37
3	El Al	0.35	0	0	(1955)	-0.09	48
4	Kuwait Airways	0.31	0	0	(1988)	-0.08	50
5	Royal Jordanian Airline	0.29	0	0	(1979)	-0.08	51
6	Air Zimbabwe	0.18	0	0	(1979)	-0.05	54

7	Oman Aviation	0.18	0	0	None	-0.05	55
8	Saudi Arabian Airlines	1.96	1	1.00	1996	0.47	66
9	Royal Air Maroc	0.62	1	1.00	1994	0.83	74
10	EgyptAir	0.85	2	1.20	2002	0.97	75
11	Kenya Air	0.37	2	1.94	2000	1.84	84
12	Iran Air	0.76	3	2.20	2002	2.00	85

Data for number of flights provided by OAGback Aviation Solutions

Regional Rank = rank of airline accident rate within airlines geographical region

Million Flights = number of departures

Fatal Events = number of flights on which at least one passenger was killed

Adjusted Fatal Event = see explanation below

Last Event = the year in which the last fatal accident took place (dates in parenthesis are accidents not included in the calculations because they are older than 20 years)

Accident Rate = see explanation below

Overall Rank = rank of airline accident rate including all airlines

The lower (more negative) the number in the "Accident Rate" column the better the rate. Any accident rate below 0 is a better than average rate. Any accident rate above 0 is a worse than average rate.

Methodology:

The Accident Rate is calculated as follows:

$$\text{Accident Rate} = D - (A * (B/C))$$

Where:

A = number of million flights completed by the airline

B = adjusted fatal events for all airlines

C = number of million flights for all airlines

D = adjusted fatal events of the airline

The Adjusted Fatal Event is calculated as follows:

The actual fatal events is adjusted downward depending on what percentage of passengers were killed in each accident. The calculation of "D" or Adjusted Fatal Events is illustrated in the following example.

An airline has 3 accidents involving fatalities:

In the first accident 120 out of 120 passengers are killed.

In the second accident 75 out of 150 passengers are killed.

In the third accident 5 out of 200 passengers are killed.

$$120/120 = 1$$

$$75/150 = 0.5$$

$$5/200 = 0.025$$

Instead of 3 actual fatal events, the Adjusted Fatal Events becomes, 1 + 0.5 + 0.025 or 1.525.

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