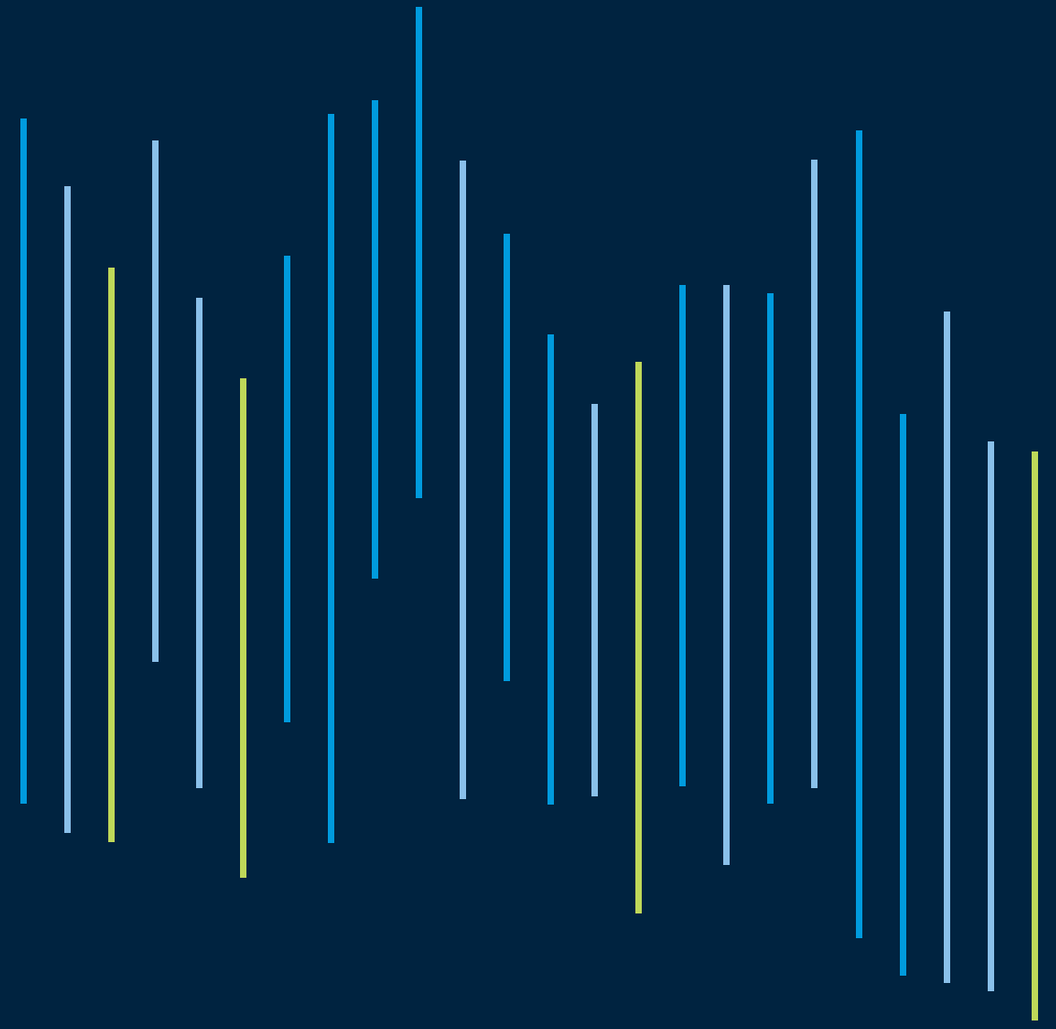
The Boeing Company

Statistical Summary of Commercial Jet Airplane Accidents

Worldwide Operations | 1959-2025

April 2026



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For any inquiries, contact STATSUM@boeing.com.

Leadership Message

Elisabeth Martin

Vice President, Enterprise Safety and Mission Assurance
Safety, Security & Airworthiness

2025 was marked by difficult reminders of how our global aviation system must continue to strengthen safety.

I want to acknowledge the deep pain accidents have caused for families and communities, whose anguish is immeasurable, and does not diminish when the calendar turns a page.

The events you'll read about in this 57th edition of the Statistical Summary of Commercial Jet Airplane Accidents are more than numbers on a chart. Each is a catalyst for progress, and it's our collective responsibility to honor those lessons in our work to ensure every flight, no matter the manufacturer, operator or region, carries passengers, crews and goods to their destination without incident.

Our industry continues to strive to make aviation safer, as demonstrated by the steps we've taken that have resulted in a meaningful long-term reduction in accidents.

Over the past two decades, this report documents a 35% decline in the total accident rate and a 60% decline in the fatal accident rate — all while departures have increased by more than 20%.

At Boeing, our dedicated safety professionals assist investigative and regulatory bodies around the world in identifying risks and mitigating them through collaboration and a shared commitment to problem-solving.

Airlines and operators are crucial partners, helping us better understand how our products and services are performing in real-world conditions, providing valuable intelligence that we use to get ahead of air safety issues.

We are also investing more resources to examine safe or expected outcomes of our aviation system to better understand what's working and why.

We thank the stakeholders whose expertise and experience have contributed to this report and honor the lives affected by continuing to learn, act and improve.

2025 Statistical Summary

This is the 57th edition of the Boeing Statistical Summary of Commercial Jet Airplane Accidents, which has been published by the company every year since 1969. The annual report provides data and statistical analysis to yield key insights into the safety of commercial air travel worldwide.

The information contained in this report can be used by the aviation industry to identify global trends and opportunities to advance safety. The findings underscore the importance of the industry's continuous pursuit of new levels of safety in order to prevent accidents, injury or loss of life.

2025 Airplane Accidents

Worldwide Commercial Jet Fleet

Event date	Airline	Model (age in years)	Type of operation	Accident location	Phase of flight	Event description	Damage category	Hull loss	Injury category	Onboard fatalities/ occupants (external fatalities)	Major accident
1/5/25	Air Dolomiti	ERJ 195 (12)	Sched Pax	Munich, Germany	Parked	A ground vehicle collided with the airplane, and the airplane was substantially damaged. There were no injuries reported.	Substantial				
1/9/25	UPS	767-300 (26)	Charter Cargo	San Bernardino, United States	Landing	The airplane sustained a tail strike during landing and received substantial damage. There were no injuries reported.	Substantial				
1/24/25	United Airlines	787-8 (12)	Sched Pax	Abidjan, Côte d'Ivoire	Cruise	The airplane experienced altitude excursions after autopilot disconnection. There was one serious injury reported.	None		Serious		
1/28/25	Max Air Limited	737-400 (27)	Sched Pax	Kano, Nigeria	Landing	The airplane's nose landing gear collapsed during landing and resulted in substantial damage. There were no injuries reported.	Substantial				
1/28/25	Air Busan	A321 (17)	Sched Pax	Busan, South Korea	Parked	The airplane was destroyed by a cabin fire while parked. There were serious injuries reported.	Destroyed	X	Serious		X
1/29/25	PSA Airlines	CRJ 700 (20)	Sched Pax	Arlington, United States	Approach	The airplane collided with a U.S. Army helicopter while on approach. The airplane was destroyed, and there were 67 fatalities reported in total between the two aircraft.	Destroyed	X	Fatal	64/64 (3)	X
2/5/25	TUI Airways	737-8 (3)	Sched Pax	London, United Kingdom	Cruise	The airplane impacted swans during climb and was substantially damaged. There were no injuries reported.	Substantial				
2/5/25	Delta Airlines	737-800 (24)	Sched Pax	Seattle, United States	Parked	The airplane was involved in a ground collision with another airplane and was substantially damaged. There were no injuries reported.	Substantial				
2/17/25	Endeavor Air	CRJ 900 (16)	Sched Pax	Toronto, Canada	Landing	The airplane overturned on landing and slid down the runway inverted. The airplane was destroyed, and there were two serious injuries reported.	Destroyed	X	Serious		X
3/8/25	IndiGo	A321NEO (2)	Sched Pax	Chennai, India	Landing	The airplane sustained a tail strike during landing and received substantial damage. There were no injuries reported.	Substantial				
3/13/25	American Airlines	737-800 (13)	Sched Pax	Denver, United States	Parked	The airplane experienced an engine fire while parked and resulted in substantial damage. Minor injuries were reported.	Substantial				
4/15/25	Frontier Airlines	A321NEO (2)	Sched Pax	San Juan, Puerto Rico	Landing	The airplane experienced a hard landing and was substantially damaged. There were no injuries reported.	Substantial				
5/11/25	Turkish Airlines	A321NEO (5)	Sched Pax	Prague, Czech Republic	Landing	The airplane sustained a tail strike during landing and received substantial damage. There were no injuries reported.	Substantial				
6/8/25	United Airlines	737-8 (4)	Sched Pax	Phoenix, United States	Taxi	The airplane came to an abrupt stop during taxi. There was one serious injury reported.	None		Serious		
6/18/25	Norwegian Air Sweden	737-800 (14)	Sched Pax	Nyköping, Sweden	Cruise	The airplane responded to a TCAS resolution advisory while at cruise, resulting in one reported serious injury.	None		Serious		
7/2/25	United Airlines	737-900ER (11)	Sched Pax	Las Vegas, United States	Landing	The airplane sustained a tail strike during landing and received substantial damage. There were no injuries reported.	Substantial				
7/7/25	Fly Play Europe Limited	A321NEO (7)	Sched Pax	Rzeszów, Poland	Cruise	The airplane encountered hail while in cruise and was substantially damaged. There were no injuries reported.	Substantial				
7/12/25	Frontier Airlines	A320NEO (4)	Sched Pax	Denver, United States	Landing	The airplane sustained a tail strike during landing and received substantial damage. There were no injuries reported.	Substantial				

2025 Airplane Accidents

Worldwide Commercial Jet Fleet

Event date	Airline	Model (age in years)	Type of operation	Accident location	Phase of flight	Event description	Damage category	Hull loss	Injury category	Onboard fatalities/ occupants (external fatalities)	Major accident
7/14/25	Republic Airways	ERJ 175 (17)	Sched Pax	Boston, United States	Landing	The airplane sustained a tail strike during landing and received substantial damage. There were no injuries reported.	Substantial				
7/18/25	Breeze Airways	A220 (1)	Sched Pax	North Charleston, United States	Parked	The airplane was involved in a ground collision with another aircraft while parked and was substantially damaged. Minor injuries were reported.	Substantial				
7/18/25	United Airlines	A319 (26)	Sched Pax	Santa Barbara, United States	Parked	Jet blast from the airplane seriously injured one person on the ground.	None		Serious		
7/26/25	American Airlines	737-8 (4)	Sched Pax	Denver, United States	Takeoff	The aircraft was substantially damaged during a rejected takeoff. There were no injuries reported.	Substantial				
8/16/25	IndiGo	A321NEO (1)	Sched Pax	Mumbai, India	Landing	The airplane sustained a tail strike during landing and received substantial damage. There were no injuries reported.	Substantial				
8/28/25	Delta Airlines	A320 (24)	Sched Pax	Chase City, United States	Cruise	The airplane responded to a TCAS resolution advisory while at cruise, resulting in one reported serious injury.	None		Serious		
9/7/25	WestJet	737-800 (17)	Sched Pax	St. Maarten, Netherlands Antilles	Landing	The airplane's right main landing gear collapsed during landing and resulted in substantial damage. Minor injuries were reported.	Substantial				
9/11/25	Wizz Air UK Limited	A321NEO (1)	Sched Pax	Prague, Czech Republic	Landing	The airplane sustained a tail strike during landing and received substantial damage. There were no injuries reported.	Substantial				
10/12/25	European Air Transport	A300-600 (34)	Charter Cargo	London, United Kingdom	Landing	The airplane sustained a tail strike during landing and received substantial damage. There were no injuries reported.	Substantial				
10/16/25	United Airlines	737-8 (2)	Sched Pax	Moab, United States	Cruise	The airplane was involved in a midair collision with an object at cruise and was substantially damaged. Minor injuries were reported.	Substantial				
10/20/25	ACT Airlines	747-400 (32)	Charter Cargo	Hong Kong, China	Landing	The airplane veered off the runway and struck a ground vehicle shortly after landing and was destroyed. There were two fatalities.	Destroyed	X	Fatal	0/4 (2)	X
10/25/25	Challenge Airlines	767-300 (28)	Charter Cargo	Liège, Belgium	Parked	The airplane's rudder was observed to be substantially damaged during a "before taxi" checklist. There were no injuries reported.	Substantial				
11/1/25	Skymark Airlines	737-800 (16)	Sched Pax	Sapporo, Japan	Approach	The airplane was struck by lightning and was substantially damaged. There were no injuries reported.	Substantial				
11/4/25	UPS	MD-11 (34)	Charter Cargo	Louisville, United States	Takeoff	The airplane's left engine separated from the wing shortly after airplane rotation, and the airplane impacted the ground. The airplane was destroyed, and there were 14 reported fatalities.	Destroyed	X	Fatal	3/3 (11)	X
11/26/25	Cathay Pacific Airways	A350 (5)	Sched Pax	Hong Kong, China	Landing	The airplane sustained a tail strike during landing and received substantial damage. There were no injuries reported.	Substantial				
11/29/25	Envoy Air	ERJ 175 (2)	Sched Pax	Chicago, United States	Taxi	The airplane was involved in a ground collision with another airplane and was substantially damaged. There were no injuries reported.	Substantial				
12/8/25	Jet2	737-800 (9)	Sched Pax	Leeds, United Kingdom	Parked	The airplane was involved in a ground handling accident and was substantially damaged. There were no injuries reported.	Substantial		Serious		
12/12/25	Aerosucre S.A.	727-200 (46)	Charter Cargo	Barranquilla, Colombia	Landing	The airplane was forced to land after the left-hand main landing gear failed after takeoff. The airplane was substantially damaged. There were no injuries reported.	Substantial	X			
36	**Total accidents**							**6**		**67 Onboard (16 external)**	**5**

Note: At the time this report was published, Air India Flight 171 was categorized as "UNK — unknown or undetermined" by the ICAO Occurrence Validation Study Group (OVSG), and therefore it did not meet the criteria for inclusion. See page 26: "Definitions and Terms."

Accident Rate and Departure Trends by Decade

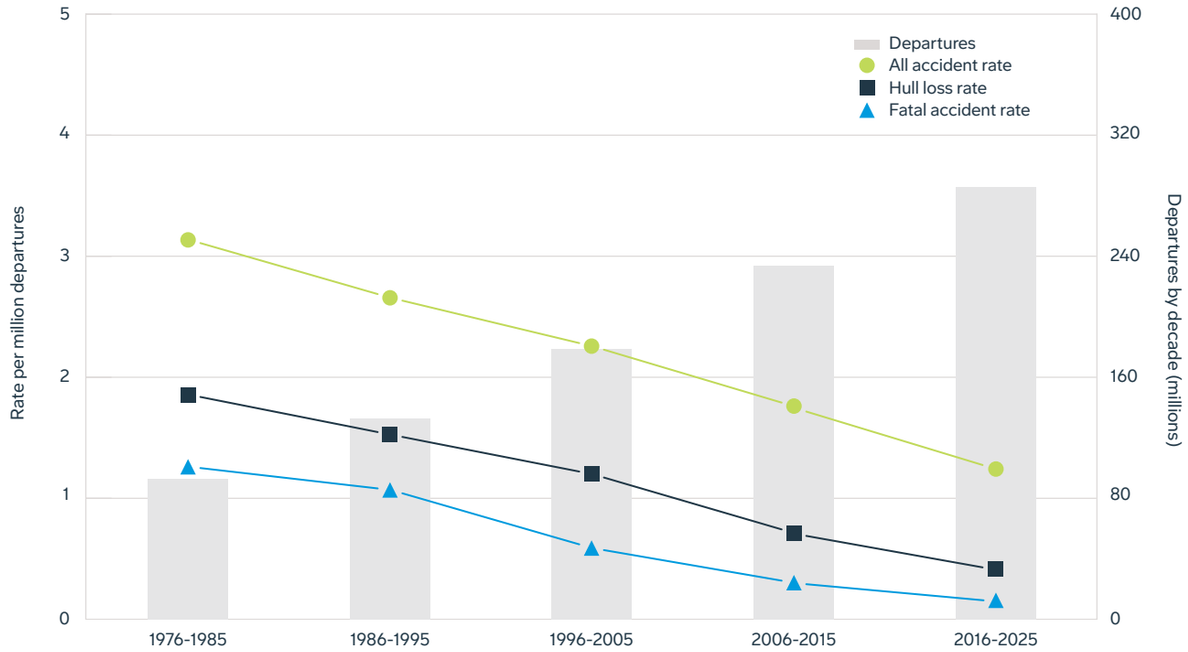
Worldwide Commercial Jet Fleet 1976-2025

Over the past five decades, statistics show that accident rates continue to decline even though air travel continues to grow worldwide. Between the last two decades, data shows the following trends:

- **Accident rate:** 35% decline
- **Hull loss rate:** 58% decline
- **Fatal accident rate:** 60% decline
- **Departures:** 22% increase

Total accident numbers are also declining, in addition to accident rates. For example, between the last two decades, total accidents dropped by about 20%; hull losses dropped by nearly 50%; and fatal accidents dropped by about 50%.

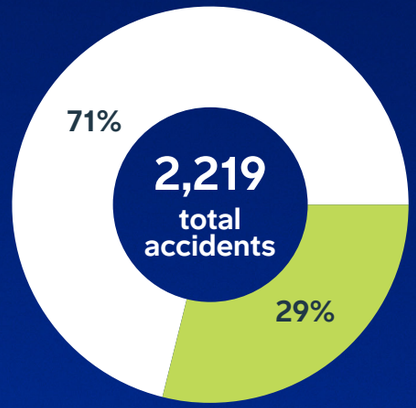
Accident Rates per One Million Departures and Total Departures, Decade View



Accident Summary by Injury and Damage

Worldwide Commercial Jet Fleet 1959-2025

1959-2025



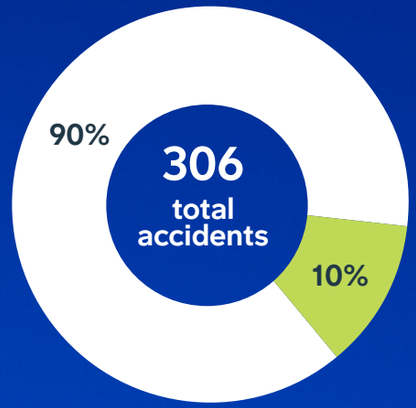
1,574 Nonfatal accidents

527 with hull loss
950 with substantial damage
97 without substantial damage

645 Fatal accidents

520 with hull loss
28 with substantial damage
97 without substantial damage

2016-2025



275 Nonfatal accidents

57 with hull loss
188 with substantial damage
30 without substantial damage

31 Fatal accidents

24 with hull loss
1 with substantial damage
6 without substantial damage

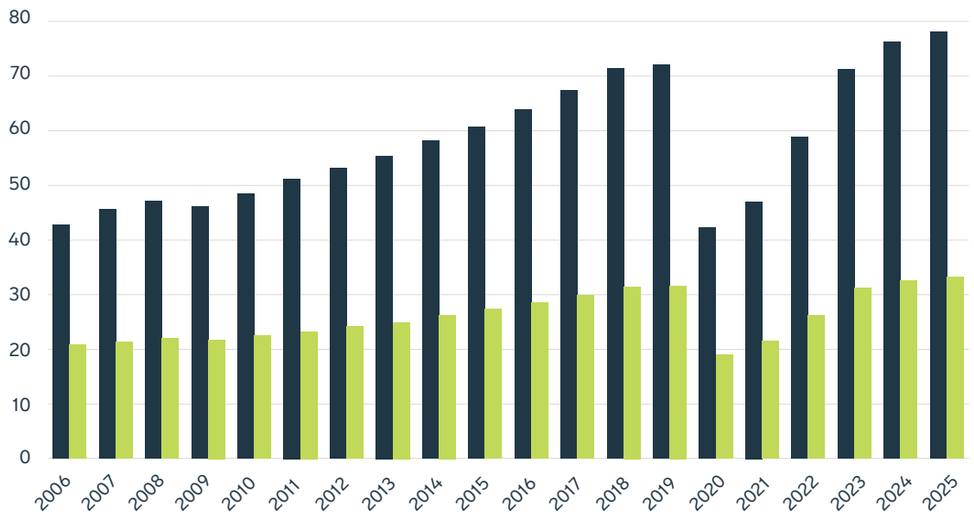
Note: "Hull loss" and the terms here refer to the severity of damage an airplane incurs from an accident.

Departures, Flight-Hours and Jet Airplanes in Service*

Worldwide Commercial Jet Fleet 2006-2025

Over the past 20 years, the statistics show a growing trend in the gap between total number of departures and total flight-hours. The worldwide airplane fleet and commercial air traffic are expected to continue to grow over the next two decades.

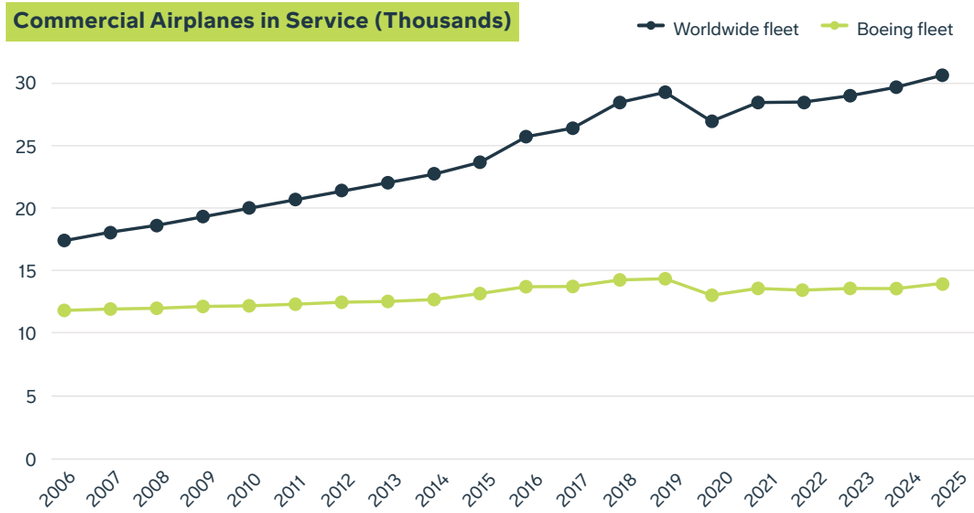
Departure and Flight-Hours (Millions)



78.3 million flight-hours
1,969 million flight-hours logged since 1959. 63% of total hours logged were on Boeing flights. (1,249 million on Boeing airplanes)

33.1 million departures
998 million departures since 1959. 62% of those departures were on Boeing airplanes. (622 million on Boeing airplanes)

Commercial Airplanes in Service (Thousands)



30,660
total airplanes

14,031
Boeing airplanes

Sources: 2005-2019, Jet Information Services Inc.
2020-2025, Cirium.

*Certified jet airplanes greater than 60,000 pounds (27,216 kilograms) maximum gross weight, including those in temporary nonflying status and those in use by non-airline operators. Excluded are commercial airplanes operated in military service and CIS/USSR/PRC-manufactured airplanes.

Accident Summary by Type of Operation

Worldwide Commercial Jet Fleet 1959-2025

Type of operation	All accidents		Fatal accidents		Onboard fatalities (external fatalities)*		Hull loss accidents	
	1959-2025	2016-2025	1959-2025	2016-2025	1959-2025	2016-2025	1959-2025	2016-2025
Passenger	1,774	251	517	25	29,955 (818)	1,099 (18)	768	55
– Scheduled	1,648	246	470	24	25,758 (814)	1,028 (18)	695	52
– Charter	126	5	47	1	4,197 (4)	71 (0)	73	3
Cargo	323	54	86	6	289 (398)	16 (48)	205	25
Maintenance test, ferry, positioning, training and demonstration	122	1	42	0	190 (66)	0 (0)	74	1
Totals	**2,219**	**306**	**645**	**31**	**30,434 (1, 282)**	**1,115 (66)**	**1,047**	**81**

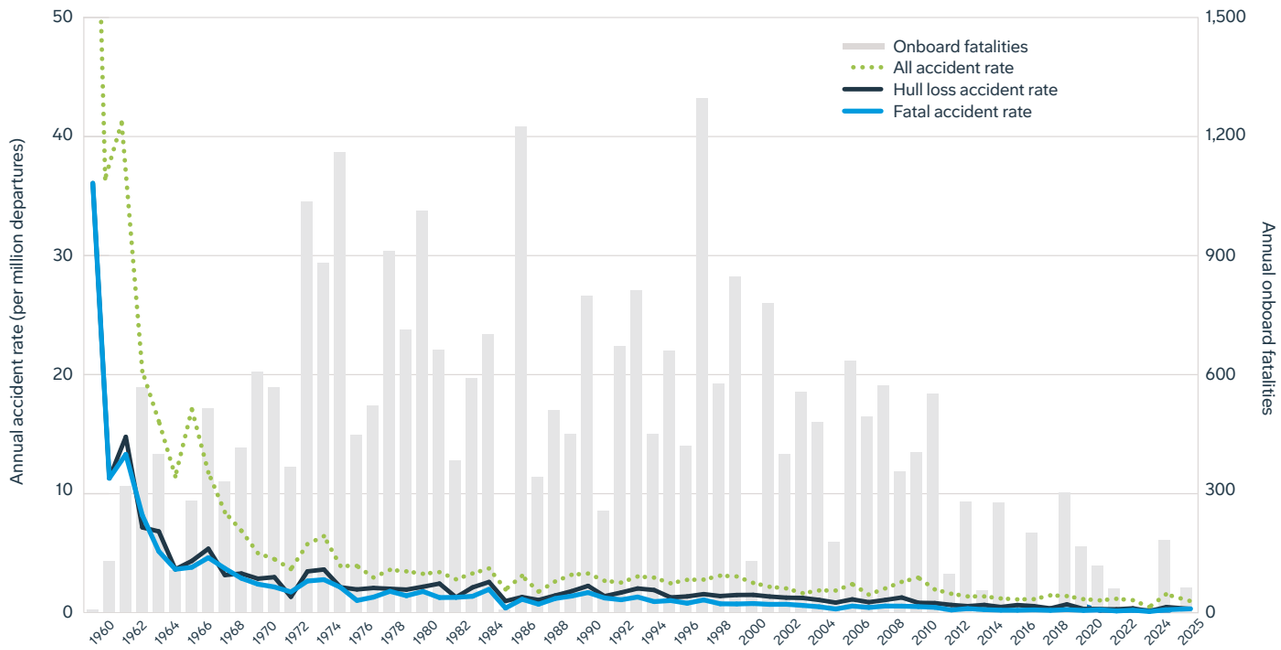
*External fatalities include on-ground fatalities as well as fatalities on other aircraft involved.

Accident Rates and Onboard Fatalities by Year

Worldwide Commercial Jet Fleet 1959-2025

The first decade of the Jet Age saw dramatic improvements in fatal accident rates. Since then, safety advancements across the industry have helped continue the downward trend over the decades, despite year-to-year fluctuations.

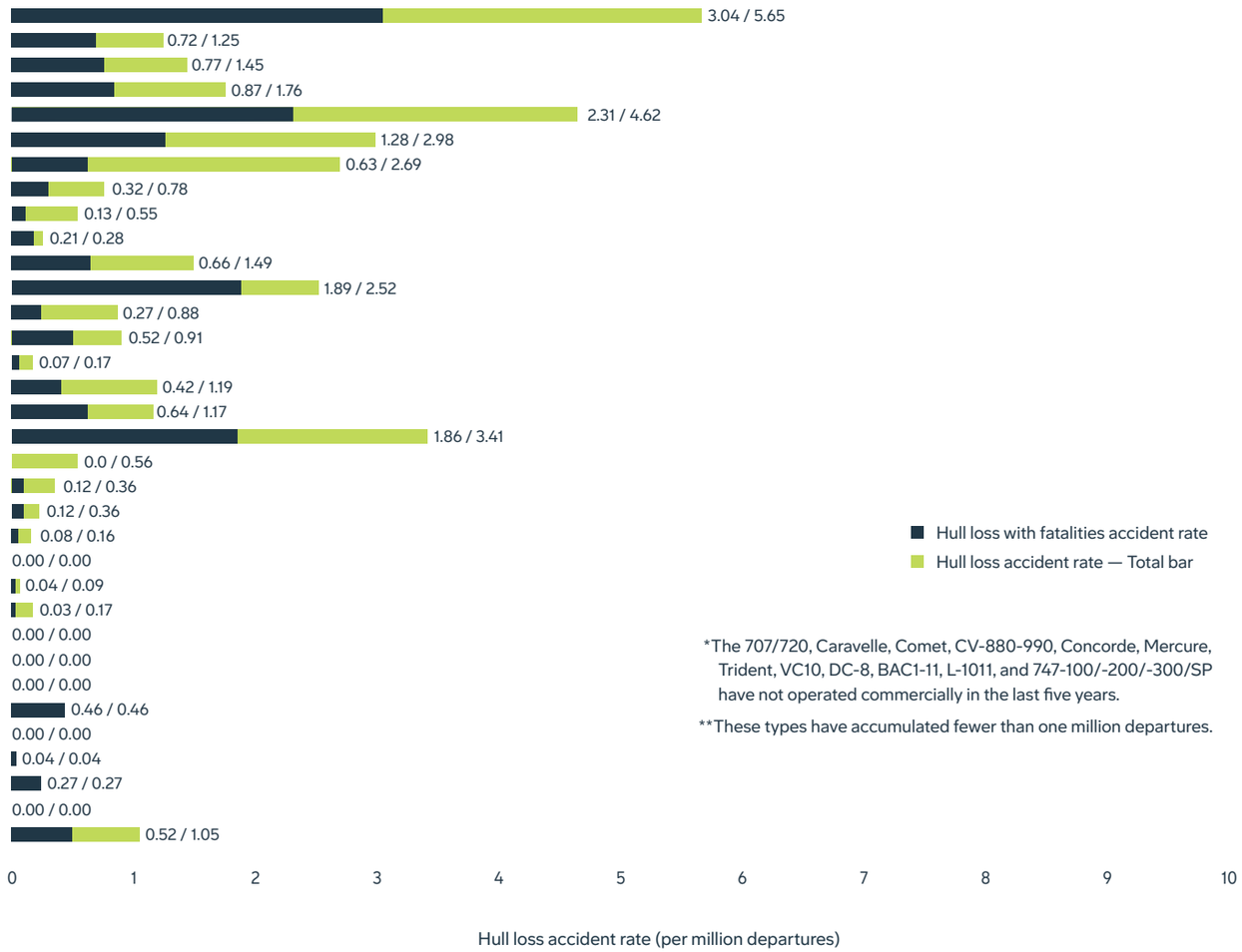
Accident Rates and Onboard Fatalities per One Million Departures



Accident Rates by Airplane Type

Hull Loss Accidents | Worldwide Commercial Jet Fleet | 1959-2025

Sorted by year of introduction	Hull loss	Hull loss with fatalities	
*No longer in service	392	211	3.04 / 5.65
727	96	55	0.72 / 1.25
DC-9	91	48	0.77 / 1.45
737-100/-200	103	51	0.87 / 1.76
F-28	42	21	2.31 / 4.62
DC-10/MD-10	28	12	1.28 / 2.98
A300	17	4	0.63 / 2.69
MD-80/-90	37	15	0.32 / 0.78
767	13	3	0.13 / 0.55
757	8	6	0.21 / 0.28
BAe 146, RJ-70/-85/-100	18	8	0.66 / 1.49
A310	12	9	1.89 / 2.52
737-300/-400/-500	68	21	0.27 / 0.88
A300-600	7	4	0.52 / 0.91
A320/321/319/318	32	14	0.07 / 0.17
F-100/F-70	14	5	0.42 / 1.19
747-400	11	6	0.64 / 1.17
MD-11	11	6	1.86 / 3.41
A340	2	0	0.0 / 0.56
A330	6	2	0.12 / 0.36
777	4	2	0.12 / 0.36
737-600/-700/-800/-900	23	11	0.08 / 0.16
717	0	0	0.00 / 0.00
CRJ-700/-900/-1000	2	1	0.04 / 0.09
EMB-170/-175/-190	6	1	0.03 / 0.17
A380	0	0	0.00 / 0.00
787	0	0	0.00 / 0.00
**747-8	0	0	0.00 / 0.00
A350	1	1	0.46 / 0.46
C-Series/A220	0	0	0.00 / 0.00
A320/321/319 NEO	1	1	0.04 / 0.04
737 MAX	2	2	0.27 / 0.27
A330 NEO	0	0	0.00 / 0.00
Total	**1,047**	**520**	0.52 / 1.05



*The 707/720, Caravelle, Comet, CV-880-990, Concorde, Mercure, Trident, VC10, DC-8, BAC1-11, L-1011, and 747-100/-200/-300/SP have not operated commercially in the last five years.

**These types have accumulated fewer than one million departures.

CAST/ICAO Common Taxonomy Team Aviation Occurrence Categories

The International Civil Aviation Organization (ICAO) and the Commercial Aviation Safety Team (CAST), which includes government officials and aviation industry leaders, have jointly chartered the CAST/ICAO Common Taxonomy Team (CICTT). CICTT includes experts from several air carriers; aircraft manufacturers; engine manufacturers; pilot associations; regulatory authorities; and various ICAO member states. CICTT is co-chaired by one representative each from ICAO and CAST.

The team is charged with developing common taxonomies and definitions for aviation accident and incident reporting systems. Common taxonomies and definitions establish a standard industry language, thereby improving the quality of information and communication. With this common language, the aviation community's capacity to focus on common safety issues is greatly enhanced.

The CICTT Aviation Occurrence Taxonomy is designed to permit an assignment of multiple categories as necessary to describe the accident or incident. Since 2001, the Occurrence Validation Study Group (OVSG), formerly Safety Indicator Steering Group (SISG), has met annually to assign CICTT occurrence categories to the prior year's accidents.

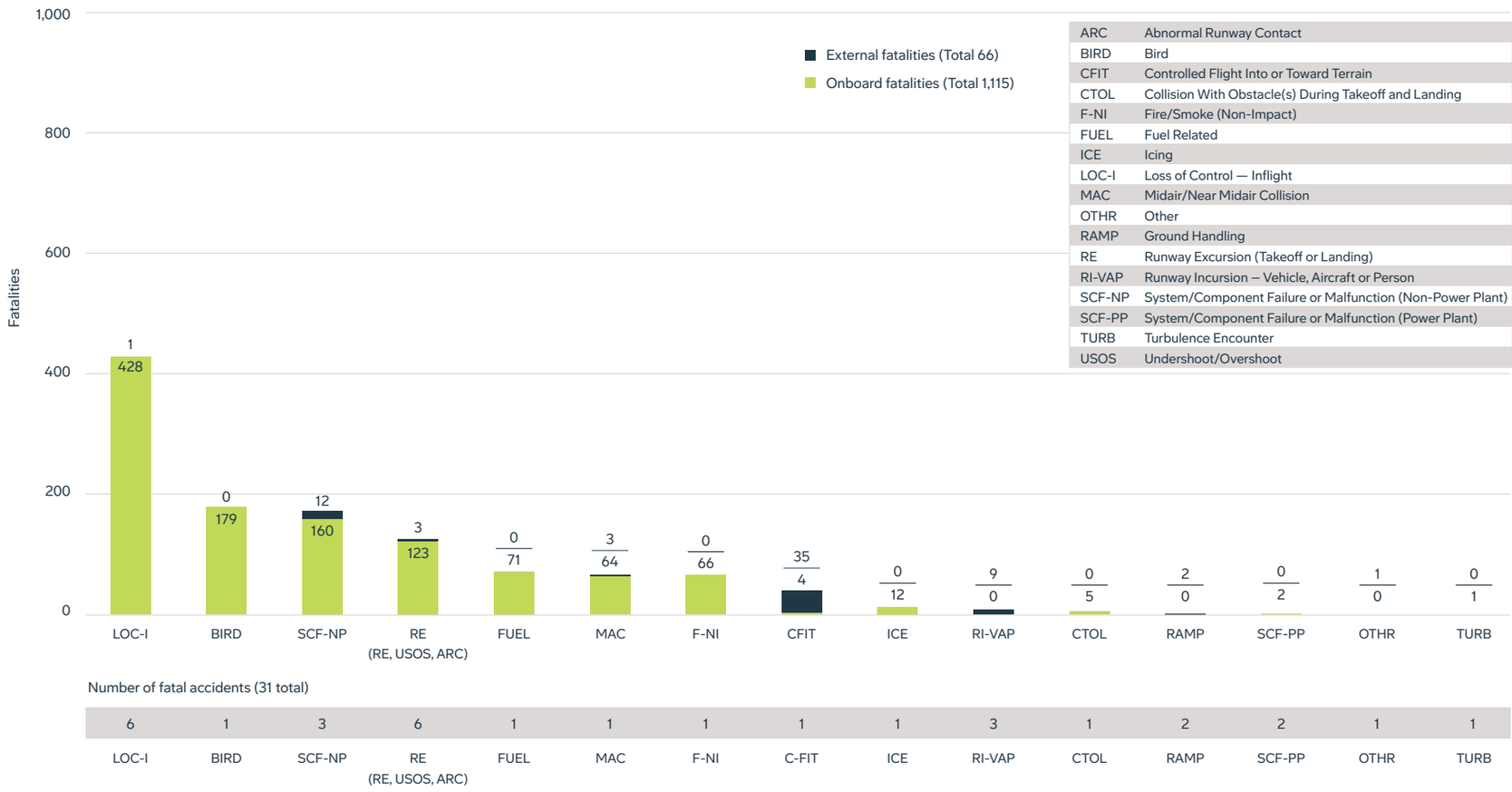
In a separate activity, the CAST assigned each fatal accident to a single principal category. Those accident assignments and a brief description of the categories are reported in the following chart.

The CAST's use of principal categories has been instrumental in focusing industry and government efforts and resources on accident prevention. Charts using principal categories are used by the CAST to identify changes to historical risk and to help to determine if the safety enhancements put in place are effective.

For a complete description of the categories, go to www.intlaviationstandards.org.

Fatalities by CICTT Aviation Occurrence Categories

Fatal Accidents | Worldwide Commercial Jet Fleet | 2016-2025



ARC	Abnormal Runway Contact
BIRD	Bird
CFIT	Controlled Flight Into or Toward Terrain
CTOL	Collision With Obstacle(s) During Takeoff and Landing
F-NI	Fire/Smoke (Non-Impact)
FUEL	Fuel Related
ICE	Icing
LOC-I	Loss of Control — Inflight
MAC	Midair/Near Midair Collision
OTHR	Other
RAMP	Ground Handling
RE	Runway Excursion (Takeoff or Landing)
RI-VAP	Runway Incursion – Vehicle, Aircraft or Person
SCF-NP	System/Component Failure or Malfunction (Non-Power Plant)
SCF-PP	System/Component Failure or Malfunction (Power Plant)
TURB	Turbulence Encounter
USOS	Undershoot/Overshoot

Number of fatal accidents (31 total)

LOC-I	BIRD	SCF-NP	RE (RE, USOS, ARC)	FUEL	MAC	F-NI	C-FIT	ICE	RI-VAP	CTOL	RAMP	SCF-PP	OTHR	TURB
6	1	3	6	1	1	1	1	1	3	1	2	2	1	1

Note: The EgyptAir Flight 804 accident, which occurred in 2016, was recently recategorized from "UNK" to "F-NI (Fire/Smoke — Non Impact)" by the ICAO Occurrence Validation Study Group (OVSG) and is now included in this report.
Note: Principal categories as assigned by CAST. See "Definitions and Terms" for included and excluded event details. For a complete description of CAST/ICAO Common Taxonomy Team (CICTT) Aviation Occurrence Categories, go to www.intlaviationstandards.org.

Fatal Accidents and Fatalities by Phase of Flight

Worldwide Commercial Jet Fleet 2016-2025

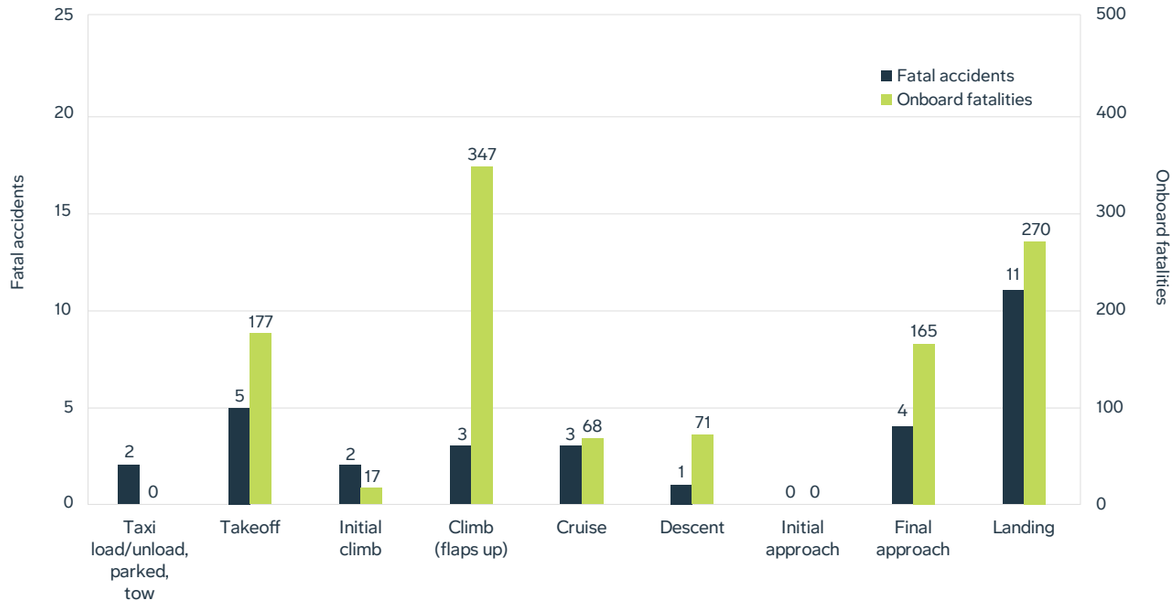
While cruising at altitude makes up the majority of time in the air, this phase of flight accounts for 10% of all fatal accidents. Conversely, the landing phase accounts for only 1% of flight time, but 35% of all fatal accidents. Most safety-related improvements over the past few decades have focused on the taxi, climb, approach and landing phases.

Percentage of Fatal Accidents and Onboard Fatalities | 2016-2025

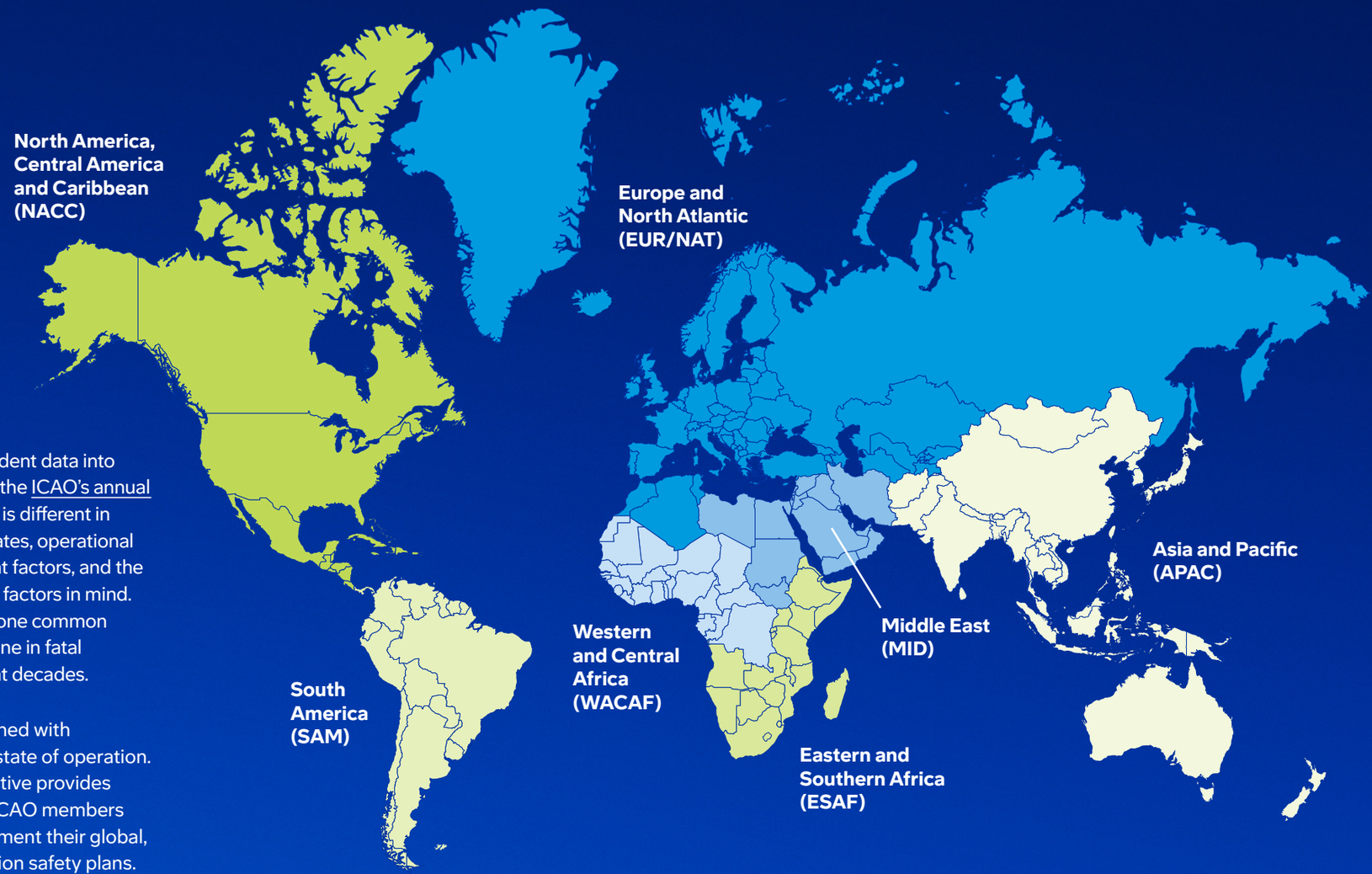
	Taxi, load/ unload, parked, tow	22% Takeoff	Initial climb	Climb (flaps up)	Cruise	Descent	Initial approach	48% Final approach	Landing
Fatal accidents	6%	16%	6%	10%	10%	3%	0%	13%	35%
Onboard fatalities	0%	16%	2%	31%	6%	6%	0%	15%	24%
		18%						39%	
Exposure (percentage of flight time estimated for a 1.5-hour flight)		1%	1%	14%	57%	*Initial approach fix* 11%	*Final approach fix* 12%	3%	1%

Note: Percentages may not sum to 100% because of numerical rounding.

Distribution of Fatal Accidents and Onboard Fatalities | 2016-2025



Regional Statistics



This section organizes accident data into seven regions aligned with the ICAO's annual Safety Report. Each region is different in terms of air travel growth rates, operational profiles and other important factors, and the data is reflected with those factors in mind. However, all regions share one common trend — the continued decline in fatal accident rates across recent decades.

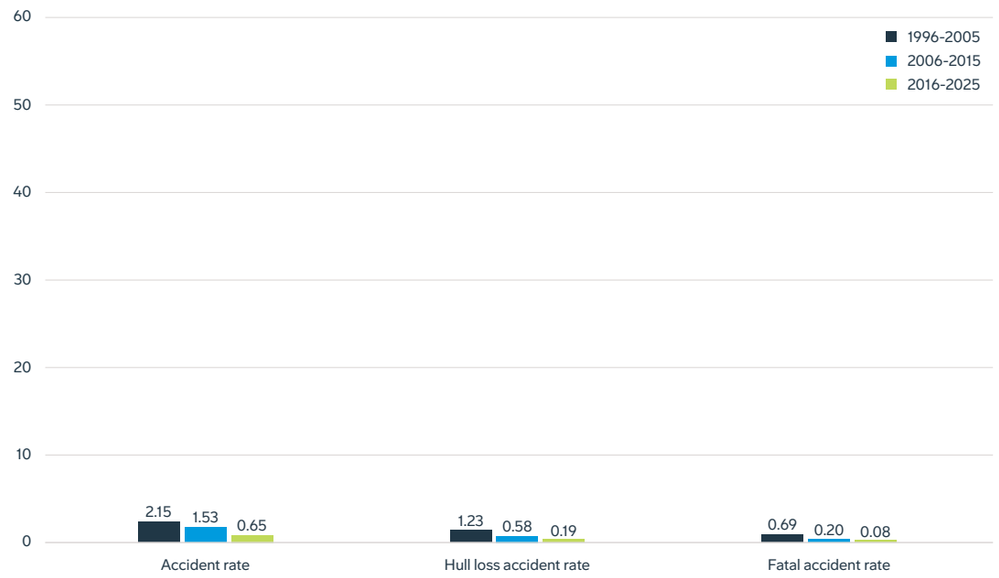
Accident statistics are aligned with operators and their home state of operation. This regional data perspective provides additional safety data for ICAO members as they develop and implement their global, regional and national aviation safety plans.

Asia and Pacific (APAC)

Regional accident counts		
APAC	**1959-2025**	**2016-2025**
All accidents	410	61
Fatal accidents	131	8
Onboard fatalities	7,377	550
External fatalities	276	6
Hull loss accidents	198	18

Fatal accidents	
CICTT category	**2016-2025**
BIRD	1
CFIT	0
CTOL	0
F-NI	0
FUEL	0
ICE	0
LOC-I	2
MAC	0
OTHR	0
RAMP	0
RE (RE, USOS, ARC)	3
RI-VAP	1
SCF-NP	0
SCF-PP	0
TURB	1

Accident Rates per One Million Departures



Percentage of Fatal Accidents and Onboard Fatalities | 2016-2025

	Taxi, load/ unload, parked, tow	Takeoff (12%)	Initial climb (12%)	Climb (flaps up)	Cruise	Descent	Initial approach	Final approach (62%)	Landing (62%)
Fatal accidents	0%	12%	0%	12%	12%	0%	0%	12%	50%
Onboard fatalities	0%	11%	0%	34%	0%	0%	0%	17%	36%
Exposure (percentage of flight time estimated for a 1.5-hour flight)		1% (11%)	1% (11%)	14%	57%	*Initial approach fix* 11%	*Final approach fix* 12%	3% (53%)	1% (53%)

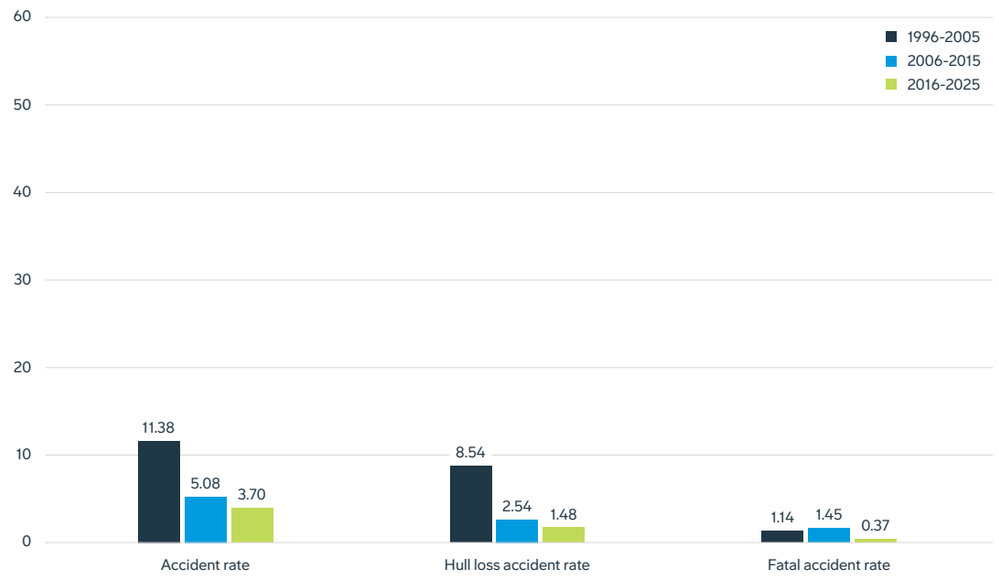
Note: Percentages may not sum to 100% because of numerical rounding.

Eastern and Southern Africa (ESAF)

Regional accident counts		
ESAF	**1959-2025**	**2016-2025**
All accidents	74	10
Fatal accidents	16	1
Onboard fatalities	1,064	157
External fatalities	10	0
Hull loss accidents	46	4

Fatal accidents	
CICTT category	**2016-2025**
BIRD	0
CFIT	0
CTOL	0
F-NI	0
FUEL	0
ICE	0
LOC-I	0
MAC	0
OTHR	0
RAMP	0
RE (RE, USOS, ARC)	0
RI-VAP	0
SCF-NP	1
SCF-PP	0
TURB	0

Accident Rates per One Million Departures



Percentage of Fatal Accidents and Onboard Fatalities | 2016-2025

	Taxi, load/ unload, parked, tow	Takeoff	Initial climb	Climb (flaps up)	Cruise	Descent	Initial approach	Final approach	Landing
		0%						0%	
Fatal accidents	0%	0%	0%	100%	0%	0%	0%	0%	0%
Onboard fatalities	0%	0%	0%	100%	0%	0%	0%	0%	0%
		0%						0%	
Exposure (percentage of flight time estimated for a 1.5-hour flight)		1%	1%	14%	57%	*Initial approach fix* 11%	*Final approach fix* 12%	3%	1%

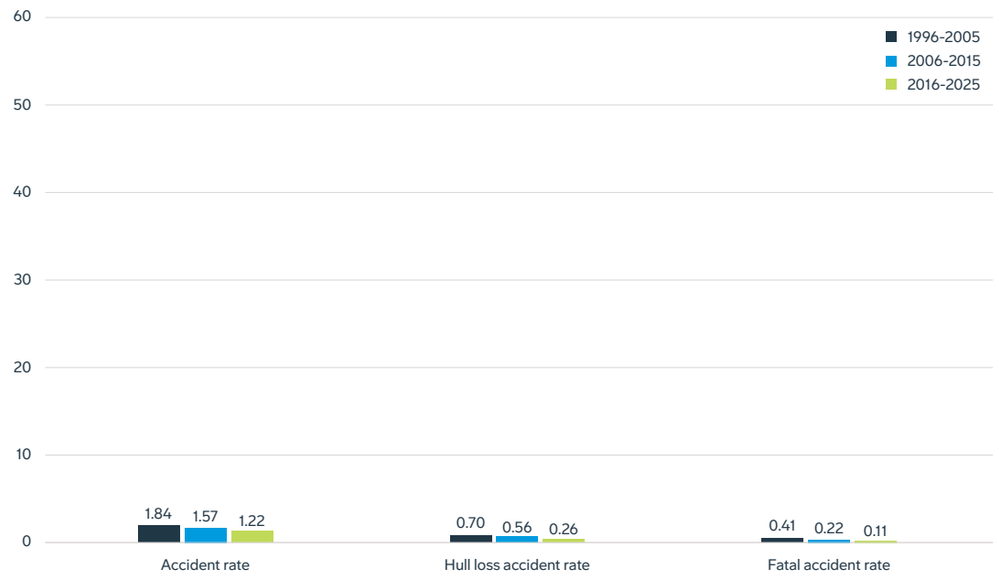
Note: Percentages may not sum to 100% because of numerical rounding.

Europe and North Atlantic (EUR/NAT)

Regional accident counts		
EUR/NAT	**1959-2025**	**2016-2025**
All accidents	536	88
Fatal accidents	145	8
Onboard fatalities	8,071	21
External fatalities	148	40
Hull loss accidents	221	19

Fatal accidents	
CICTT category	**2016-2025**
BIRD	0
CFIT	1
CTOL	0
F-NI	0
FUEL	0
ICE	1
LOC-I	0
MAC	0
OTHR	0
RAMP	1
RE (RE, USOS, ARC)	3
RI-VAP	1
SCF-NP	0
SCF-PP	1
TURB	0

Accident Rates per One Million Departures



Percentage of Fatal Accidents and Onboard Fatalities | 2016-2025

	Taxi, load/ unload, parked, tow	12% Takeoff	Initial climb	Climb (flaps up)	Cruise	Descent	Initial approach	62% Final approach	Landing
Fatal accidents	12%	0%	12%	0%	12%	0%	0%	12%	50%
Onboard fatalities	0%	0%	57%	0%	4%	0%	0%	4%	33%
		57%						37%	
Exposure (percentage of flight time estimated for a 1.5-hour flight)		1%	1%	14%	57%	*Initial approach fix* 11%	*Final approach fix* 12%	3%	1%

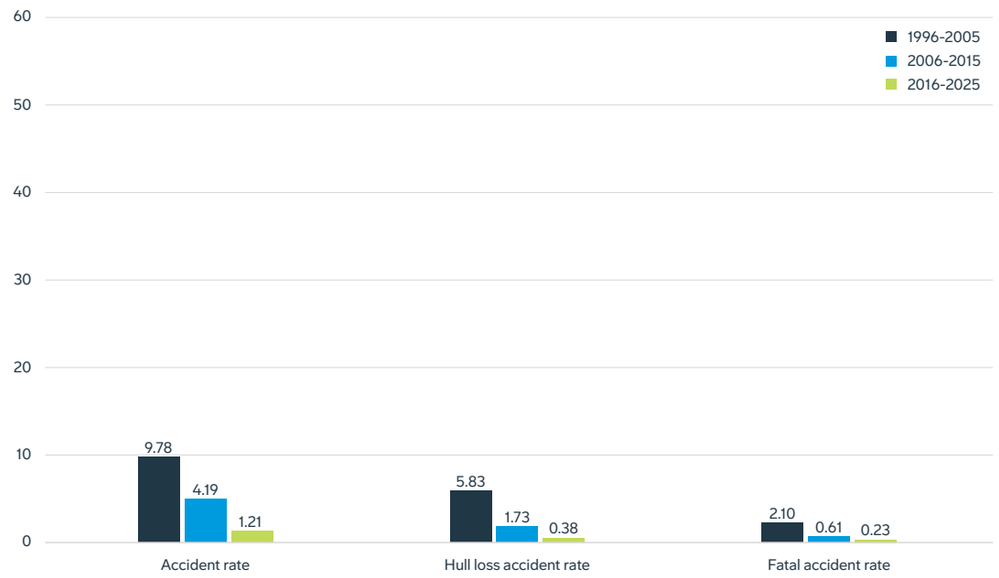
Note: Percentages may not sum to 100% because of numerical rounding.

Middle East (MID)

Regional accident counts		
MID	**1959-2025**	**2016-2025**
All accidents	150	16
Fatal accidents	42	3
Onboard fatalities	2,419	128
External fatalities	128	1
Hull loss accidents	77	5

Fatal accidents	
CICTT category	**2016-2025**
BIRD	0
CFIT	0
CTOL	0
F-NI	1
FUEL	0
ICE	0
LOC-I	2
MAC	0
OTHR	0
RAMP	0
RE (RE, USOS, ARC)	0
RI-VAP	0
SCF-NP	0
SCF-PP	0
TURB	0

Accident Rates per One Million Departures



Percentage of Fatal Accidents and Onboard Fatalities | 2016-2025

	Taxi, load/ unload, parked, tow	Takeoff	Initial climb	Climb (flaps up)	Cruise	Descent	Initial approach	Final approach	Landing
		0%						66%	
Fatal accidents	0%	0%	0%	0%	33%	0%	0%	0%	66%
Onboard fatalities	0%	0%	0%	0%	51%	0%	0%	0%	48%
		0%						48%	
Exposure (percentage of flight time estimated for a 1.5-hour flight)		1%	1%	14%	57%	*Initial approach fix* 11%	*Final approach fix* 12%	3%	1%

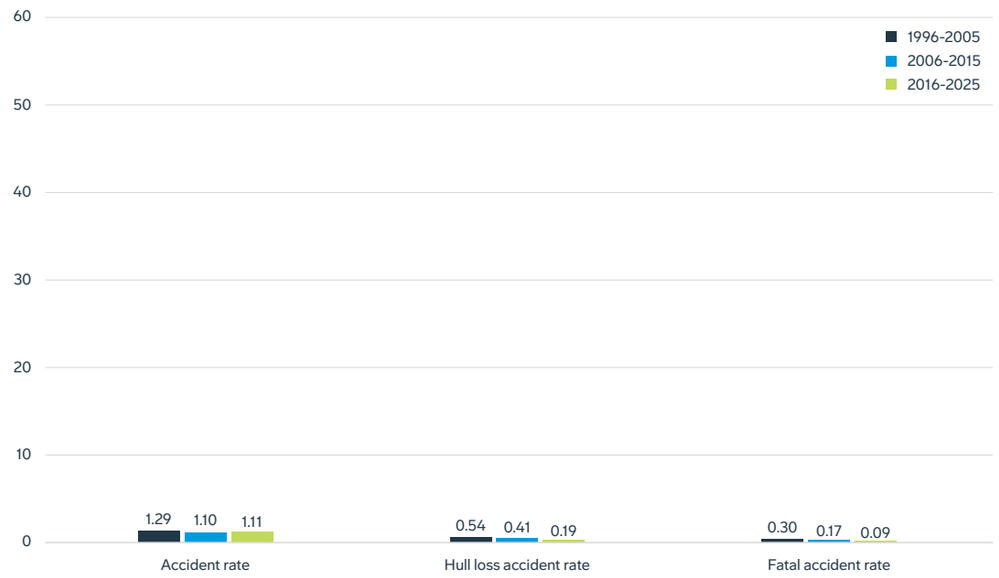
Note: Percentages may not sum to 100% because of numerical rounding.

North America, Central America and Caribbean (NACC)

Regional accident counts		
NACC	1959-2025	2016-2025
All accidents	736	98
Fatal accidents	213	8
Onboard fatalities	7,296	183
External fatalities	430	17
Hull loss accidents	285	17

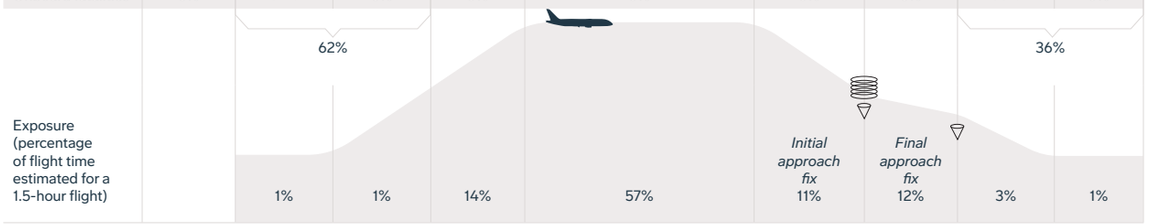
Fatal accidents	
CICTT category	2016-2025
BIRD	0
CFIT	0
CTOL	0
F-NI	0
FUEL	0
ICE	0
LOC-I	2
MAC	1
OTHR	1
RAMP	1
RE (RE, USOS, ARC)	0
RI-VAP	0
SCF-NP	2
SCF-PP	1
TURB	0

Accident Rates per One Million Departures



Percentage of Fatal Accidents and Onboard Fatalities | 2016-2025

	Taxi, load/ unload, parked, tow	Takeoff (37%)	Initial climb (37%)	Climb (flaps up)	Cruise	Descent	Initial approach	Final approach (37%)	Landing (37%)
Fatal accidents	12%	37%	0%	12%	0%	0%	0%	25%	12%
Onboard fatalities	0%	62%	0%	0%	0%	0%	0%	36%	0%
Exposure (percentage of flight time estimated for a 1.5-hour flight)		1%	1%	14%	57%	*Initial approach fix* 11%	*Final approach fix* 12%	3%	1%



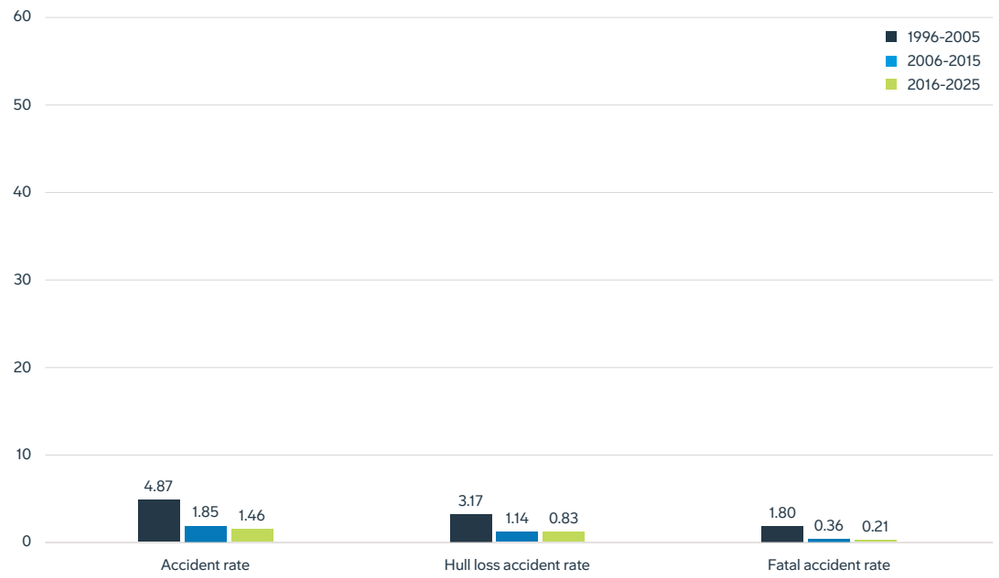
Note: Percentages may not sum to 100% because of numerical rounding.

South America (SAM)

Regional accident counts		
SAM	**1959-2025**	**2016-2025**
All accidents	215	21
Fatal accidents	74	3
Onboard fatalities	3,250	76
External fatalities	212	2
Hull loss accidents	147	12

Fatal accidents	
CICTT category	**2016-2025**
BIRD	0
CFIT	0
CTOL	1
F-NI	0
FUEL	1
ICE	0
LOC-I	0
MAC	0
OTHR	0
RAMP	0
RE (RE, USOS, ARC)	0
RI-VAP	1
SCF-NP	0
SCF-PP	0
TURB	0

Accident Rates per One Million Departures



Percentage of Fatal Accidents and Onboard Fatalities | 2016-2025

	Taxi, load/ unload, parked, tow	66% Takeoff	Initial climb	Climb (flaps up)	Cruise	Descent	Initial approach	0% Final approach	Landing
Fatal accidents	0%	33%	33%	0%	0%	33%	0%	0%	0%
Onboard fatalities	0%	0%	6%	0%	0%	93%	0%	0%	0%
Exposure (percentage of flight time estimated for a 1.5-hour flight)		6% 1%	1%	14%	57%	*Initial approach fix* 11%	*Final approach fix* 12%	0% 3%	1%

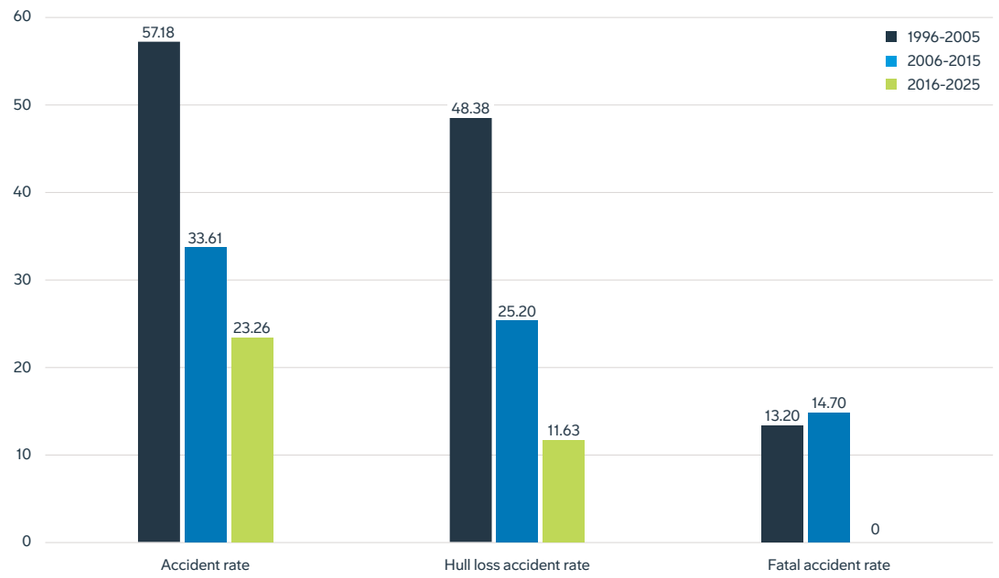
Note: Percentages may not sum to 100% because of numerical rounding.

Western and Central Africa (WACAF)

Regional accident counts		
WACAF	**1959-2025**	**2016-2025**
All accidents	98	12
Fatal accidents	24	0
Onboard fatalities	957	0
External fatalities	78	0
Hull loss accidents	73	6

Fatal accidents	
CICTT category	**2016-2025**
BIRD	0
CFIT	0
CTOL	0
F-NI	0
FUEL	0
ICE	0
LOC-I	0
MAC	0
OTHR	0
RAMP	0
RE (RE, USOS, ARC)	0
RI-VAP	0
SCF-NP	0
SCF-PP	0
TURB	0

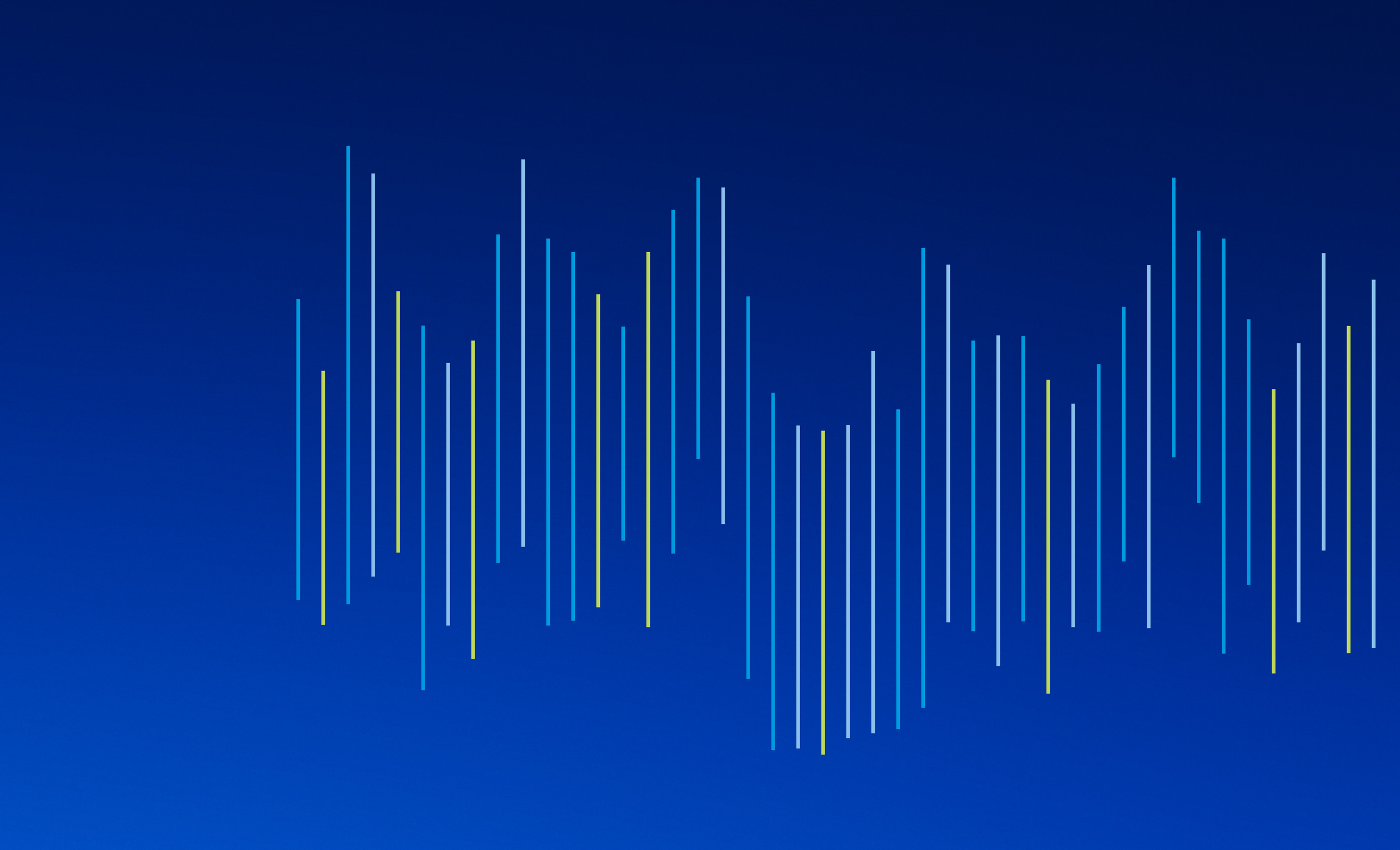
Accident Rates per One Million Departures



Percentage of Fatal Accidents and Onboard Fatalities | 2016-2025

	Taxi, load/ unload, parked, tow	Takeoff	Initial climb	Climb (flaps up)	Cruise	Descent	Initial approach	Final approach	Landing
		0%						0%	
Fatal accidents	0%	0%	0%	0%	0%	0%	0%	0%	0%
Onboard fatalities	0%	0%	0%	0%	0%	0%	0%	0%	0%
		0%						0%	
Exposure (percentage of flight time estimated for a 1.5-hour flight)		1%	1%	14%	57%	*Initial approach fix* 11%	*Final approach fix* 12%	3%	1%

Note: Percentages may not sum to 100% because of numerical rounding.



About This Document

The accident statistics presented in this summary are confined to worldwide commercial jet airplanes that are heavier than 60,000 pounds (27,216 kilograms) maximum gross weight. Within that set of airplanes, there are two groups excluded:

1. Airplanes manufactured in the Commonwealth of Independent States (CIS), the Union of Soviet Socialist Republics (USSR), or the People's Republic of China (PRC) due to lack of operational data.
2. Commercial airplanes operated in military service. (However, if a military-owned commercial jet transport is used for civilian commercial service, that data will be included in this summary.)

The following airplanes are included in the statistics:

Boeing		**Airbus**	**BAE SYSTEMS (Avro)**	**BAE SYSTEMS (HS)**	**Embraer**	**Lockheed**
707/720	DC-8	A300	Avro RJ70/85/100	BAe 146	E170/175	L-1011
727	DC-9	A300-600		Comet 4	E190/195	
737	DC-10/MD-10	A310	**BAE SYSTEMS (BAC)**	Trident		**Dassault Aviation**
747	MD-11	A320/321/319/318	Concorde		**Fokker**	Mercure
757	MD-80/-90	A330	One-Eleven	**Bombardier**	F28	
767		A340	VC10	CRJ700/900/1000	F70	**General Dynamics (Convair)**
777		A350			F100	
787		A380		**Aérospatiale**		CV-880/-990
717		A220/C Series		Caravelle		

Flight operations data for Boeing airplanes is developed internally from airline operator reports. Flight operations data for non-Boeing airplanes is compiled by Cirium. The source of jet airplane inventory data is Cirium.

Accident data is obtained, when available, from government accident reports. Otherwise, information is from operators, manufacturers, various government and private information services, and press accounts.

Readers may note that cumulative accident totals from year to year may not exactly correlate with the expected change from the previous year's accidents. This is a result of periodic audits of the entire accident history for updates to the data.

Definitions related to the development of statistics in this summary are primarily based on corresponding ICAO, U.S. National Transportation Safety Board (NTSB) and Flight Safety Foundation (FSF) terms, as explained in the next section.

Definitions

Airplane Accident

An occurrence associated with the operation of an airplane that takes place between the time any person boards the airplane with the intention of flight and such time as all such persons have disembarked, in which:

- The airplane sustains substantial damage.
- Death or serious injury results from:
  - Being in the airplane.
  - Direct contact with the airplane or anything attached thereto.
  - Direct exposure to jet blast.

Excluded Airplanes

Airplanes manufactured in the CIS, USSR or the PRC are excluded because of the lack of operational data. Commercial airplanes operated in military service are generally excluded. (If a military-owned commercial jet transport is used for civilian commercial service, that data is included in this summary.)

Excluded Events

- Fatal and nonfatal injuries from natural causes.
- Fatal and nonfatal self-inflicted injuries or injuries inflicted by other persons.
- Fatal and nonfatal injuries of stowaways hiding outside the areas normally available to the passengers and crew.
- Nonfatal injuries resulting from atmospheric turbulence, normal maneuvering, loose objects, boarding, disembarking, evacuation, and maintenance and servicing.
- Nonfatal injuries to persons not aboard the airplane.
- Occurrences classified as missing, unknown or undetermined (CICTT occurrence category UNK) are not included in this publication until otherwise determined by the official ICAO Annex 13 investigation.

Note: The exclusion of the UNK occurrence category is in alignment with industry efforts to identify, prioritize and reduce global high-risk categories of occurrences such as those identified in ICAO's Global Aviation Safety Plan (GASP).

(See the "CAST/ICAO Common Taxonomy Team Aviation Occurrence Categories" section.)

Definitions

Excluded Events (continued)

The following occurrences are **not** considered airplane accidents:

- Those that are the result of experimental flight tests. (However, maintenance flight tests, ferry, positioning, training and demonstration flights are not excluded.)
- Those that are the result of a hostile action, including sabotage, hijacking, terrorism and military action.

Note: This is generally consistent with the ICAO and the NTSB definition of an accident. (See the "Referenced ICAO and NTSB Definition" section.)

The differences are:

1. The ICAO and NTSB references to "aircraft" were changed to "airplane" and references to propellers and rotors were eliminated.
2. This publication excludes events that result in nonfatal injuries from atmospheric turbulence, normal maneuvering, etc.; nonfatal injuries to persons not aboard the airplane; and any events that result from an experimental flight test or from hostile action, such as sabotage, hijacking, terrorism and military action.

Note: Within this publication, the term "accident" is used interchangeably with "airplane accident."

Destroyed

The estimated or likely cost of repairs would have exceeded 50% of the new value of the airplane had it still been in production at the time of the accident.

Note: This definition is consistent with the FSF definition. NTSB defines "destroyed" as damaged due to impact, fire or in-flight failures to an extent not economically repairable.

Fatal Injury

Any injury that results in death within 30 days of the accident.

Note 1: This is consistent with both the ICAO and the NTSB definitions.

Note 2: External fatalities include on-ground fatalities as well as fatalities on other aircraft involved.

Definitions

Major Accident

An accident in which any of three conditions is met:

- The airplane was destroyed.
- There were multiple fatalities.
- There was one fatality and the airplane was substantially damaged.

Note: This definition is consistent with the NTSB definition. It also is generally consistent with FSF, except that the FSF definition specifies that fatalities include only occupants of the airplane. ICAO does not normally define the term “major accident.”

Serious Injury

An injury that is sustained by a person in an accident and that:

- Requires hospitalization for more than 48 hours, commencing within seven days from the date the injury was received.
- Results in a fracture of any bone (except simple fractures of fingers, toes or nose).
- Causes severe hemorrhage, nerve, muscle or tendon damage.
- Involves injury to any internal organ.
- Involves second- or third-degree burns or any burns affecting more than 5% of the body surface.
- Involves verified exposure to infectious substances or injurious radiation.

Note: This is generally consistent with the ICAO definition. It is also consistent with the NTSB definition except for the last bullet, which is not included in the NTSB definition.

Definitions

Substantial Damage

Damage or failure that adversely affects the structural strength, performance, or flight characteristics of the airplane, and that would normally require major repair or replacement of the affected component.

Substantial damage is not considered to be:

- Engine failure or damage limited to an engine, if only one engine fails or is damaged.
- Bent fairings or cowlings.
- Dents in the skin.
- Small puncture holes in the skin.
- Damage to wheels.
- Damage to tires.
- Damage to flaps.
- Damage to engine accessories.
- Damage to brakes.
- Damage to wingtips.

Note 1: This definition is generally consistent with the NTSB definition of substantial damage except it (1) deletes the reference to “small puncture holes in the fabric” and “ground damage to rotor or propeller blades,” and (2) deletes “damage to landing gear” from the list of items not considered to be substantial damage.

Note 2: ICAO does not define the term “substantial damage.” Still, the definition is generally consistent with the ICAO definition of damage or structural failure contained within Part (B) of the ICAO accident definition.

Note 3: Boeing does not consider damage to be substantial if repairs to an event airplane enable it to be flown to a repair base within 48 hours of the event.

Boeing Terms*

Accident Rates

In general, this expression is a measure of accidents per million departures. Departures (or flight cycles) are used as the basis for calculating rates because there is a stronger statistical correlation between accidents and departures than there is between accidents and flight-hours, or between accidents and the number of airplanes in service, or between accidents and passenger miles or freight miles. Airplane departures data is continually updated and revised as new information and estimating processes become available. These form the baseline for the measure of accident rates, and, as a consequence, rates may vary between editions of this publication.

Airplane Collisions

Events involving two or more airplanes are counted as separate events, one for each airplane. For example, destruction of two airplanes in a collision is considered to be two separate accidents.

Fatal Accident

An accident that results in fatal injury.

Hull Loss

Airplane totally destroyed or damaged and not repaired. Hull loss also includes, but is not limited to, events in which:

- The airplane is missing. An aircraft is considered to be missing when the official search has been terminated and the wreckage has not been located.
- The airplane is completely inaccessible.

State of Operation

Regional data is reported based on the ICAO member state that serves as the headquarters location of the operator involved in the accident.

*The terms on this page were created by Boeing for this publication and do not have corresponding equivalents in ICAO or NTSB.

Referenced ICAO and NTSB Definitions

Accident

ICAO defines an "accident" as follows:

Accident. An occurrence associated with the operation of an aircraft that, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down, in which:

A. A person is fatally or seriously injured as a result of:

- Being in the aircraft.
- Direct contact with any part of the aircraft, including parts which have become detached from the aircraft.
- Direct exposure to jet blast, except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew.

B. The aircraft sustains damage or structural failure which:

- Adversely affects the structural strength, performance or flight characteristics of the aircraft.
- Would normally require major repair or replacement of the affected component, except for engine failure or damage, when the damage is limited to a single engine (including its cowlings or accessories), to propellers, wingtips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aircraft skin (such as small dents or puncture holes), or for minor damages to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike (including holes in the radome).

C. The aircraft is missing or is completely inaccessible.

NTSB defines an "aircraft accident" as follows:

Aircraft accident means an occurrence associated with the operation of an aircraft that takes place between the time any person boards the aircraft with the intention of flight and all such persons have disembarked, and in which any person suffers death or serious injury, or in which the aircraft receives substantial damage. For purposes of this part, the definition of "aircraft accident" includes "unmanned aircraft accident," as defined in 49 CFR 830.2.

Referenced ICAO and NTSB Definitions

Safety Management System (SMS)

ICAO defines an "SMS" as follows:

An SMS is a systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures. Visit www.icao.int/safety/SafetyManagement for more information.

Serious Injury

ICAO defines "serious injury" as follows:

An injury that is sustained by a person in an accident and which:

A. Requires hospitalization for more than 48 hours, commencing within seven days from the date the injury was received.

B. Results in a fracture of any bone (except simple fractures of fingers, toes or nose).

C. Involves lacerations that cause severe hemorrhage, nerve, muscle or tendon damage.

D. Involves injury to any internal organ.

E. Involves second- or third-degree burns, or any burns affecting more than 5% of the body surface.

F. Involves verified exposure to infectious substances or injurious radiation.

NTSB defines "serious injury" as any injury that:

A. Requires hospitalization for more than 48 hours, commencing within seven days from the date the injury was received.

B. Results in a fracture of any bone (except simple fractures of fingers, toes or nose).

C. Causes severe hemorrhages, nerve, muscle or tendon damage.

D. Involves any internal organ.

E. Involves second- or third-degree burns, or any burns affecting more than 5% of the body surface.

Substantial Damage

NTSB defines "substantial damage" as follows:

Substantial damage means damage or failure that adversely affects the structural strength, performance, or flight characteristics of the aircraft, and which would normally require major repair or replacement of the affected component. Engine failure or damage limited to an engine if only one engine fails or is damaged, bent fairings or cowling, dented skin, small puncture holes in the skin or fabric, ground damage to rotor or propeller blades, and damage to landing gear, wheels, tires, flaps, engine accessories, brakes, or wingtips are not considered "substantial damage" for the purpose of this part.

ICAO does not define the term "substantial damage."

2025 Statistical Summary