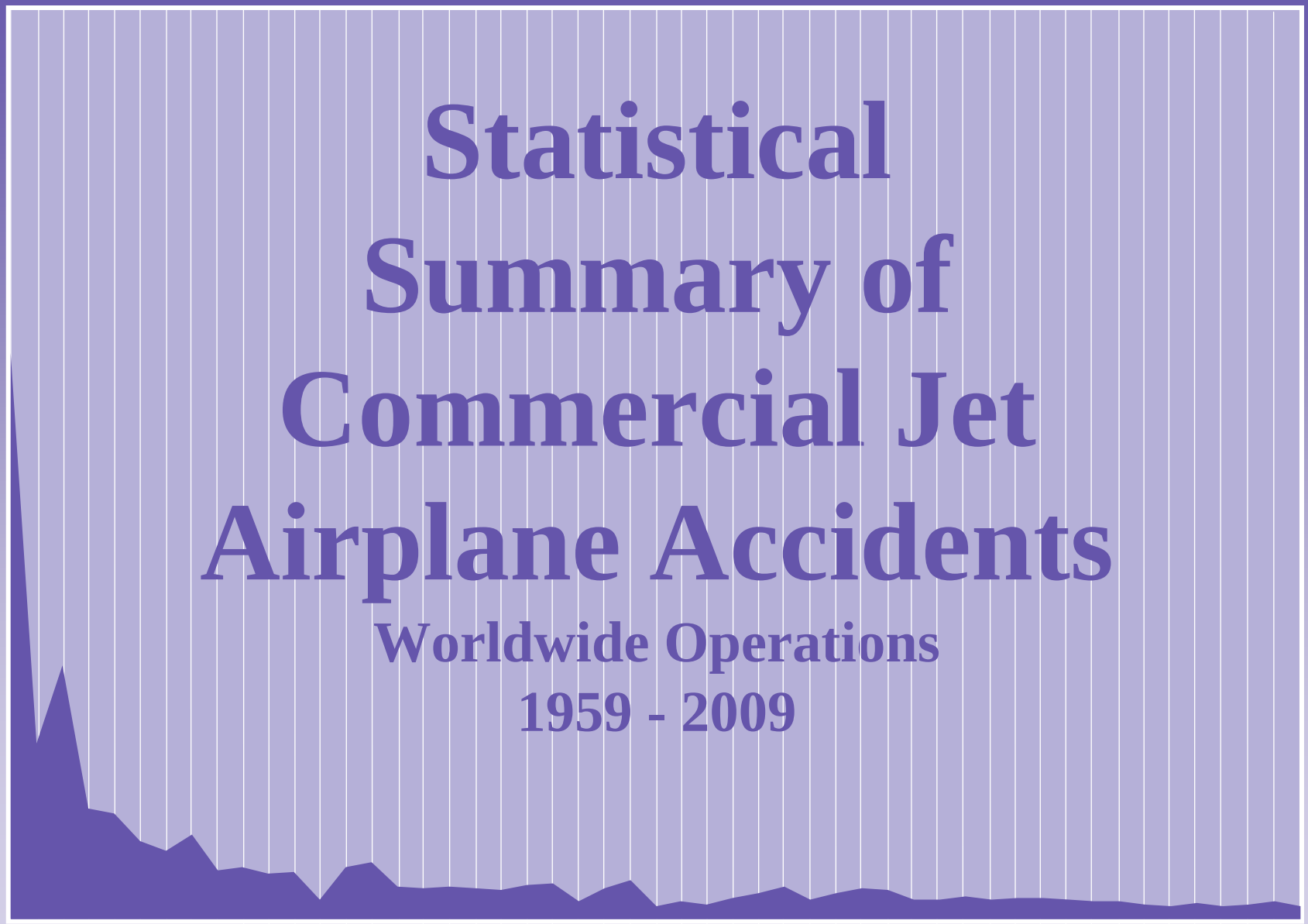
Statistical Summary of Commercial Jet Airplane Accidents

Worldwide Operations
1959 - 2009



1959

2009

Contents

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Introduction

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

1) Airplanes manufactured in the Commonwealth of Independent States (CIS) or the Union of Soviet Socialist Republics (USSR) are excluded because of the lack of operational data; and

2) Commercial airplanes operated in military service. (However, if a military-owned commercial jet transport is used for civilian commercial service, those data will be included in this summary.)

The following airplanes are included in the statistics:

717	DC-8	A300	BAe 146	F-28	Concorde	L-1011	BAC 1-11	Comet 4
707/720	DC-9	A300-600	Avro RJ-70/-85/-100	F-70				Trident
727	DC-10/MD-10	A310	CRJ-700/-900	F-100				Caravelle
737	MD-11	A320/321/319/318	EMB-170/-175/-190					Mercure
747	MD-80/-90	A330						CV-880/-990
757		A340						VC-10
767		A380						
777								

Flight operations data for Boeing airplanes are developed internally from airline operator reports. Flight operations data for non-Boeing airplanes are compiled from www.ascendworldwide.com, by Ascend. The source of jet airplane inventory data is Jet Information Services, Inc.

Accident data are 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 development of statistics in this summary are primarily based on corresponding International Civil Aviation Organization (ICAO), 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:

- Death or serious injury results from:
  - Being in the airplane; or
  - Direct contact with the airplane or anything attached thereto; or
  - Direct exposure to jet blast;

  Excluding:
    - Fatal and nonfatal injuries from natural causes; and
    - Fatal and nonfatal self-inflicted injuries or injuries inflicted by other persons; and
    - Fatal and nonfatal injuries of stowaways hiding outside the areas normally available to the passengers and crew; and
    - Nonfatal injuries resulting from atmospheric turbulence, maneuvering, loose objects, boarding, disembarking, evacuation, and maintenance and servicing; and
    - Nonfatal injuries to persons not aboard the airplane; or
- The airplane sustains substantial damage; or
- The airplane is missing or is completely inaccessible.

The following occurrences are **not** considered airplane accidents – those that are the result of experimental test flights or 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 Definitions section). The differences are:

1) *The ICAO and NTSB references to "aircraft" were changed to "airplane" and references to propellers and rotors were eliminated; and*

2) *This publication excludes events that result in nonfatal injuries from atmospheric turbulence, maneuvering, etc.; nonfatal injuries to persons not aboard the airplane; and any events that result from an experimental test flight 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."

Definitions (continued)

Destroyed: The estimated or likely cost of repairs would have exceeded 50 percent 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: This is consistent with both the ICAO and the NTSB definitions.

Major Accident: An accident in which any of three conditions is met:

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

Note: This definition is consistent with the NTSB definition. It is also generally consistent with FSF, except that FSF confines multiple fatalities to occupants. ICAO does not normally define the term "major accident".

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

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

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

Definitions (continued)

Substantial Damage: Damage or failure which adversely affects the structural strength, performance, or flight characteristics of the airplane, and which 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 is generally consistent with the NTSB definition of substantial damage except: 1) It deletes reference to "puncture holes in the fabric" and "ground damage to rotor or propeller blades"; and 2) It 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 above definition is generally consistent with the ICAO definition of structural damage contained within part (b) of the ICAO accident definition.

Boeing Terms

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

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, since 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 are 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; or
- The search for the wreckage has been terminated without it being located; or
- The airplane is completely inaccessible.

Note: Neither ICAO nor NTSB has a definition for hull loss.

Exclusions

Certain airplanes and events are excluded from consideration as accidents in this summary. This is a complete list of those exclusions.

Excluded Airplanes

Airplanes manufactured in the Commonwealth of Independent States (CIS) or the Union of Soviet Socialist Republics (USSR) are excluded because of the lack of operational data. Commercial airplanes operated in military service are also excluded. (However, if a military-owned commercial jet transport is used for civilian commercial service, those data are 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, maneuvering, loose objects, boarding, disembarking, evacuation, and maintenance and servicing;
- Nonfatal injuries to persons not aboard the airplane;
- Experimental test flights (however, maintenance test flights, ferry, positioning, training, and demonstration flights are not excluded);
- Sabotage, hijacking, terrorism, and military action.

Referenced ICAO and NTSB Definitions

International Civil Aviation Organization (ICAO) and National Transportation Safety Board (NTSB) definitions are included below for reference.

Accident

ICAO defines an **accident** as follows:

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 until such time as all such persons have disembarked, in which:

a) A person is fatally or seriously injured as a result of:
   - Being in the aircraft, or
   - Direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or
   - 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; or
b) The aircraft sustains damage or structural failure which:
   - Adversely affects the structural strength, performance, or flight characteristics of the aircraft, and
   - Would normally require major repair or replacement of the affected component,

   except for engine failure or damage, when the damage is limited to the engine, its cowlings or accessories; or for damage limited to propellers, wing tips, antennas, tires, brakes, fairings, small dents or puncture holes in the aircraft skin; or
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 which 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.

Referenced ICAO and NTSB Definitions (continued)

Serious Injury

ICAO defines **serious injury** as follows:

An injury which 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; or
b) Results in a fracture of any bone (except simple fractures of fingers, toes, or nose); or
c) Involves lacerations which cause severe hemorrhage, nerve, muscle, or tendon damage; or
d) Involves injury to any internal organ; or
e) Involves second or third degree burns, or any burns affecting more than 5 percent of the body surface; or
f) Involves verified exposure to infectious substances or injurious radiation.

NTSB defines **serious injury** as follows:

Serious injury means any injury which:

1) Requires hospitalization for more than 48 hours, commencing within 7 days from the date the injury was received;
2) Results in a fracture of any bone (except simple fractures of fingers, toes, or nose);
3) Causes severe hemorrhages, nerve, muscle, or tendon damage;
4) Involves any internal organ; or
5) Involves second- or third-degree burns, or any burns affecting more than 5 percent of the body surface.

Substantial Damage

NTSB defines **substantial damage** as follows:

Damage or failure that adversely affects the structural strength, performance, or flight characteristics of the aircraft, and that 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."

ICAO does not define the term **substantial damage**.

2009 Airplane Accidents

All Accidents – Worldwide Commercial Jet Fleet

Event Date	Airline	Model (A/P 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
6-Jan-09	China Southern Airlines	777-200 (10)	Sched Pax	(over) Pacific Ocean	Cruise	A flight attendant sustained a broken ankle after footing was lost on the access ladder to the lower lobe attendant crew rest area.			Serious		
15-Jan-09	US Airways	A320 (9)	Sched Pax	New Jersey, USA	Climb	Shortly after takeoff, the airplane sustained multiple bird strikes. The airplane lost thrust to both engines and ditched in the Hudson River.	Destroyed	X	Serious		X
17-Jan-09	Iran Air	F-100 (18)	Sched Pax	Yazd, Iran	Parked	After gate arrival, the airplane's forward fuselage was struck by an ambulift. There were no injuries.	Substantial				
19-Jan-09	Iran Air	F-100 (16)	Sched Pax	Tehran, Iran	Landing	The airplane's right main landing gear failed and collapsed on or shortly after touchdown. The airplane veered off the right side of the runway onto the grass. There were no injuries.	Substantial	X			
9-Feb-09	Air Mediterranee	A321 (2)	Sched Pax	Paris, France	Landing	After landing, the airplane overshot the runway turnoff onto the taxiway and ran onto soft ground. Both engines sustained FOD. There were no injuries.	Substantial				
13-Feb-09	BA CityFlyer	RJ-100 (11)	Sched Pax	London, United Kingdom	Landing	The airplane sustained damage when its nose landing gear collapsed during landing. Several minor injuries occurred during emergency evacuation.	Substantial	X			
16-Feb-09	Air Algerie	737-400 (11)	Charter Pax	In Aménas, Algeria	Landing	After multiple landing attempts in poor weather the airplane overran the runway, stopping on soft ground beyond the end of the runway. Several minor injuries occurred during emergency evacuation.	Substantial				
19-Feb-09	Atlasjet Airlines	A320 (11)	Sched Pax	Istanbul, Turkey	Tow	During pushback from the gate, the towbar failed sending the airplane rolling backwards down a slight slope. The horizontal stabilizer struck a light pole. There were no injuries.	Substantial				
23-Feb-09	Royal Air Maroc	737-800 (<1)	Sched Pax	Medina, Saudi Arabia	Takeoff	The airplane sustained damage to the lower aft fuselage after a tail strike during takeoff. There were no injuries.	Substantial				
23-Feb-09	Lion Air	MD-90 (12)	Sched Pax	Batam, Indonesia	Landing	The crew was unable to extend the nose landing gear, and the airplane landed nose gear up. The airplane came to a stop on the runway and was safely evacuated with no reported injuries.	Substantial				
25-Feb-09	Turkish Airlines	737-800 (6)	Sched Pax	Amsterdam, The Netherlands	Landing	The airplane crashed during landing approach, coming down in open ground short of the runway threshold.	Destroyed	X	Fatal	9/135 (0)	X
2-Mar-09	CityJet	RJ-85 (10)	Sched Pax	Dublin, Ireland	Tow	During a non-standard pushback operation, the tug jackknifed, the tow bar broke and the airplane suffered damage when it struck the tug. There were no injuries.	Substantial				

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2009 Airplane Accidents

All Accidents – Worldwide Commercial Jet Fleet

Event Date	Airline	Model (A/P 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
9-Mar-09	Lion Air	MD-90 (11)	Sched Pax	Jakarta, Indonesia	Landing	The airplane veered off the runway after landing in heavy rain and strong winds. The main landing gear collapsed and separated from the airplane. There were no injuries.	Destroyed	X			X
20-Mar-09	Emirates	A340 (4)	Sched Pax	Melbourne, Australia	Takeoff	On takeoff, the airplane's nose failed to lift off at V_R. The first officer pulled harder and the tail struck the ground. After liftoff, the crew made an immediate turnback. An incorrect takeoff weight had been used. There were no injuries.	Substantial				
23-Mar-09	FedEx	MD-11 (15)	Sched Cargo	Tokyo, Japan	Landing	After a hard landing, the aircraft bounced then touched down, nose gear first. During the accident sequence, the left wing fractured inboard of the left main landing gear attach fitting. The aircraft rolled, became inverted, and was consumed by fire.	Destroyed	X	Fatal	2/2 (0)	X
4-Apr-09	Air China	A321 (< 1)	Sched Pax	Beijing, China	Landing	The airplane bounced on landing, then hit hard in a nose high attitude, striking the tail. The flight crew initiated a go-around and returned. There were no injuries.	Substantial				
9-Apr-09	Aviastar Mandiri	BAe 146 (18)	Charter Cargo	(near) Wamena, Indonesia	Approach	After a low altitude missed approach, the airplane impacted a hill near the airport while attempting to land.	Destroyed	X	Fatal	6/6 (0)	X
12-Apr-09	Wizz Air	A320 (3)	Sched Pax	Timisoara, Romania	Landing	The airplane was damaged during a nose gear-first hard landing. There were no injuries.	Substantial				
16-Apr-09	Jade Cargo Int'l	747-400 (2)	Sched Cargo	Incheon, South Korea	Landing	On landing, the No. 4 engine failed to go into reverse thrust when selected. When reversers were stowed, the No. 4 engine thrust increased significantly, causing the airplane to veer left and off the runway. There were no injuries.	Substantial				
20-Apr-09	Royal Air Maroc	767-300 (7)	Sched Pax	New York, USA	Landing	The airplane was damaged during a hard landing. There were no injuries.	Substantial				
27-Apr-09	Magni-charters	737-200 (26)	Charter Pax	Guadalajara, Mexico	Landing	The crew was unable to extend the landing gear, and the airplane was damaged after landing gear up. Some minor injuries occurred during the evacuation via the escape slides.	Substantial				
29-Apr-09	Bako Air	737-200 (28)	Ferry	(near) Massamba, Congo DR	Cruise	The airplane crashed enroute and was consumed by fire.	Destroyed	X	Fatal	7/7 (0)	X
4-May-09	Northwest Airlines	A320 (18)	Sched Pax	Denver, USA	Landing	The airplane was damaged when it experienced a hard tail strike on landing. There were several minor injuries.	Substantial				
6-May-09	World Airways	DC-10 (29)	Charter Pax	Baltimore, USA	Landing	After a hard landing, the left nose gear tire failed. The landing was rejected and a go-around conducted. The second landing was uneventful but the airplane had sustained fuselage damage on the first attempt.	Substantial	X	Serious		

2009 Airplane Accidents

All Accidents – Worldwide Commercial Jet Fleet

Event Date	Airline	Model (A/P 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-May-09	NAS Air	A320 (1)	Sched Pax	Alexandria, Egypt	Landing	The airplane sustained damage after a hard landing. There were no injuries.	Substantial				
8-May-09	Saudi Arabian Airlines	MD-90 (9)	Ferry	Riyadh, Saudi Arabia	Taxi	The airplane was damaged after it veered off the runway into soft ground during exit onto a high speed taxiway. The left main landing gear collapsed and the airplane dragged its left wing. There were no injuries.	Substantial	X			
8-May-09	Asiana Airlines	747-400 (14)	Sched Cargo	(near) Frankfurt, Germany	Approach	The airplane, on final approach, lost most of the left hand inboard fore flap. It punctured the fuselage and impacted the vertical stabilizer. There were no injuries.	Substantial				
19-May-09	American Airlines	777-200 (9)	Sched Pax	Miami, USA	Parked	During cargo loading operations, an employee fell from the cargo loader ladder to the ramp.			Fatal	(1)	
1-Jun-09	Air France	A330 (4)	Sched Pax	(over) Atlantic Ocean	Cruise	The airplane was reported missing when communication was lost. It was later found to have crashed into the Atlantic Ocean.	Destroyed	X	Fatal	228/228 (0)	X
3-Jun-09	China Cargo	MD-11 (15)	Sched Cargo	Urumqi, China	Landing	The airplane's aft fuselage sustained damage during a hard landing. There were no injuries.	Substantial				
3-Jun-09	Aeroflot-Nord	737-500 (18)	Sched Pax	(near) Moscow, Russia	Cruise	The airplane encountered heavy hail enroute causing damage to wings and fuselage. The airplane landed at the destination airport safely. There were no injuries.	Substantial				
6-Jun-09	Myanma Airways	F-28 (32)	Sched Pax	Akyab, Myanmar	Landing	The airplane sustained damage to the right main landing gear and right wing when it departed the runway during landing. It came to a stop after hitting trees and running over a ditch. There were several minor injuries.	Destroyed	X			X
8-Jun-09	United Airlines	777-200 (7)	Sched Pax	(over) Pacific Ocean	Cruise	A flight attendant sustained a broken ankle after footing was lost on the access ladder to the lower lobe attendant crew rest area.			Serious		
9-Jun-09	Saudi Arabian Airlines	MD-11 (11)	Sched Cargo	Khartoum, Sudan	Landing	The airplane's fuselage and nose landing gear were damaged during a hard landing. There were no injuries.	Substantial				
27-Jun-09	US Airways	737-400 (18)	Sched Pax	Tampa, USA	Landing	The airplane's nose landing gear was severely damaged during a hard landing. There were no injuries.	Substantial				
30-Jun-09	Yemenia	A310 (19)	Sched Pax	(over) Indian Ocean	Approach	The airplane was on approach when it went missing from radar. It was later found to have crashed into the Indian Ocean.	Destroyed	X	Fatal	152/153 (0)	X
7-Jul-09	Rossiya Russian Airlines	A320 (7)	Sched Pax	St. Petersburg, Russia	Landing	The airplane was damaged when it experienced a tail strike on landing. There were no injuries.	Substantial				

2009 Airplane Accidents

All Accidents – Worldwide Commercial Jet Fleet

Event Date	Airline	Model (A/P 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
17-Jul-09	Transaero Airlines	737-400 (19)	Sched Pax	Moscow, Russia	Landing	During a hard bounced landing, the airplane sustained damage when its tail struck the runway. There were no injuries.	Substantial				
21-Jul-09	Aeromexico	737-700 (5)	Sched Pax	San Francisco, USA	Tow	During airplane pushback operation, the nose landing gear partially collapsed when the drag strut fractured. There were no injuries.	Substantial				
3-Aug-09	Saha Air	707-300 (32)	Sched Pax	Ahwaz, Iran	Initial Climb	Shortly after liftoff, the No.2 engine had an uncontained failure. Shrapnel impacted and damaged the No.1 engine and punctured the left main fuel tank. The aircraft returned to an uneventful landing. There were no injuries.	Substantial				
4-Aug-09	Sata Internacional	A320 (< 1)	Sched Pax	Ponta Delgada, Portugal	Landing	The airplane sustained damage when it made a hard landing on the runway. There were no injuries.	Substantial				
10-Aug-09	All Nippon Airways	737-800 (< 1)	Sched Pax	Tokyo, Japan	Landing	The airplane sustained damage to the aft fuselage after a tail strike on landing. There were no injuries.	Substantial				
4-Sep-09	Air India	747-400 (16)	Sched Pax	Mumbai, India	Taxi	During taxi to the runway, a fire started near the No.1 engine and left wing due to a fuel leak. The airplane sustained fire damage. There were several minor evacuation injuries.	Substantial				
13-Sep-09	Lufthansa Cargo	MD-11 (17)	Sched Cargo	Mexico City, Mexico	Landing	The airplane sustained damage to the forward fuselage and nose landing gear after a hard landing. There were no injuries.	Substantial				
14-Sep-09	Contact Air Flugdienst	F-100 (13)	Sched Pax	Stuttgart, Germany	Landing	The crew was unable to extend the main landing gear, and the airplane sustained fuselage damage while landing gear up. There were several minor injuries.	Substantial				
1-Oct-09	Wind Jet	A319 (3)	Sched Pax	(near) Catania, Italy	Cruise	While en route, the airplane encountered severe turbulence and hail, damaging the radome and wing. There were no injuries.	Substantial				
2-Oct-09	Malaysia Airlines	737-400 (16)	Charter Pax	Kuching, Malaysia	Tow	During pushback, the airplane was damaged when the left main landing gear collapsed forward and the airplane came to rest on its left engine. There were no injuries.	Substantial				
6-Oct-09	Boliviana de Aviacion	737-300 (19)	Sched Pax	(near) Cochabamba, Bolivia	Cruise	The airplane encountered heavy hail in flight, sustaining damage to the nose cone, wings, empennage and all leading edges. There were no injuries.	Substantial				
20-Oct-09	Centurion Air Cargo	MD-11 (17)	Sched Cargo	Montevideo, Uruguay	Landing	The airplane sustained damage to the right main landing gear and right wing when it made a hard landing in reduced visibility conditions. There were no injuries.	Substantial				
21-Oct-09	Sudan Airways	707-300 (40)	Sched Cargo	(near) Sharjah United Arab Emirates	Initial Climb	Shortly after initial climb, the airplane banked to the right and impacted the ground. The airplane was consumed by post impact fire.	Destroyed	X	Fatal	6/6 (0)	X

2009 Airplane Accidents

All Accidents – Worldwide Commercial Jet Fleet

Event Date	Airline	Model (A/P 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
30-Oct-09	Pegasus Airlines	737-800 (2)	Sched Pax	Malatya, Turkey	Taxi	The airplane sustained damage when the left wing struck a light pole during taxi. There were no injuries.	Substantial				
2-Nov-09	Delta Air Lines	MD-90 (14)	Sched Pax	(near) Phoenix, USA	Climb	While climbing through 12,000 feet, the airplane was damaged when it struck a flock of birds. The flight diverted and landed uneventfully. There were no injuries.	Substantial				
18-Nov-09	Iran Air	F-100 (17)	Sched Pax	Isfahan, Iran	Landing	Unable to retract the main landing gear, the crew elected to return. On landing, the left main landing gear collapsed. There were no injuries.	Substantial				
19-Nov-09	Compagnie Africaine d'Aviation	MD-82 (21)	Sched Pax	Goma, Congo, DR	Landing	After landing in rainy weather, the airplane was damaged when it overran the runway and impacted lava remains. There were several minor injuries.	Destroyed	X			X
28-Nov-09	Avient Aviation	MD-11 (18)	Sched Cargo	Shanghai, China	Takeoff	The airplane failed to get airborne at takeoff rotation, overran the runway, struck retaining walls, and caught fire.	Destroyed	X	Fatal	3/7 (0)	X
1-Dec-09	TAF Linhas Aereas	727-200 (40)	Sched Cargo	Sao Paulo, Brazil	Taxi	On taxi in, following a normal landing, the airplane was damaged when its brakes failed and it struck a maintenance stand. There were no injuries.	Substantial				
2-Dec-09	Merpati Nusantara Airlines	F-100 (16)	Sched Pax	Kupang, Indonesia	Landing	After failing to get the left main landing gear extended, the crew elected to land with it partially extended. Directional control was lost during landing, and the airplane was damaged when it veered off the runway. There were no injuries.	Substantial				
17-Dec-09	TAF Linhas Aereas	727-200 (35)	Sched Pax	Manaus, Brazil	Approach	On final approach, the airplane encountered a wind shear condition. After the crew elected to go around, the airplane was damaged when it contacted trees on climbout. The airplane diverted to an uneventful landing. There were no injuries.	Substantial				
21-Dec-09	Merpati Nusantara Airlines	737-300 (21)	Sched Pax	Makassar, Indonesia	Landing	The airplane was damaged after a hard landing in heavy rain and a tailwind. There were no injuries.	Substantial				
21-Dec-09	Canadian North	737-200 (22)	Sched Pax	Calgary, Canada	Parked	During an airplane de-icing operation prior to departure, a de-icer was fatally injured when he fell from the bucket to the tarmac.			Fatal	(1)	
22-Dec-09	American Airlines	737-800 (8)	Sched Pax	Kingston, Jamaica	Landing	After landing at night in poor weather and a tailwind, the airplane was damaged when it overran the runway, broke through the perimeter fence, travelled across a road and came to rest near the Caribbean Sea. There were a number of minor injuries.	Destroyed	X			X
29-Dec-09	Wizz Air	A320 (1)	Sched Pax	Boryspil, Ukraine	Landing	After landing in poor weather, with snow and low visibility, the airplane was damaged when it veered off the side of the runway shortly after touchdown and ground looped. There were no injuries.	Substantial				
62	Total Accidents							17		413 Onboard (2) External	13

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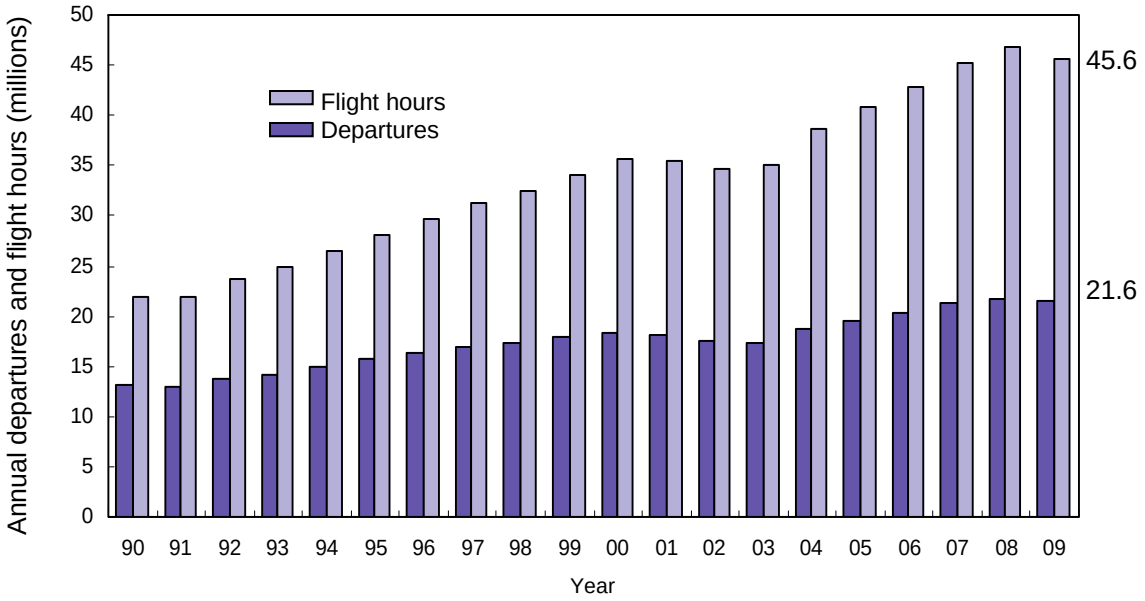
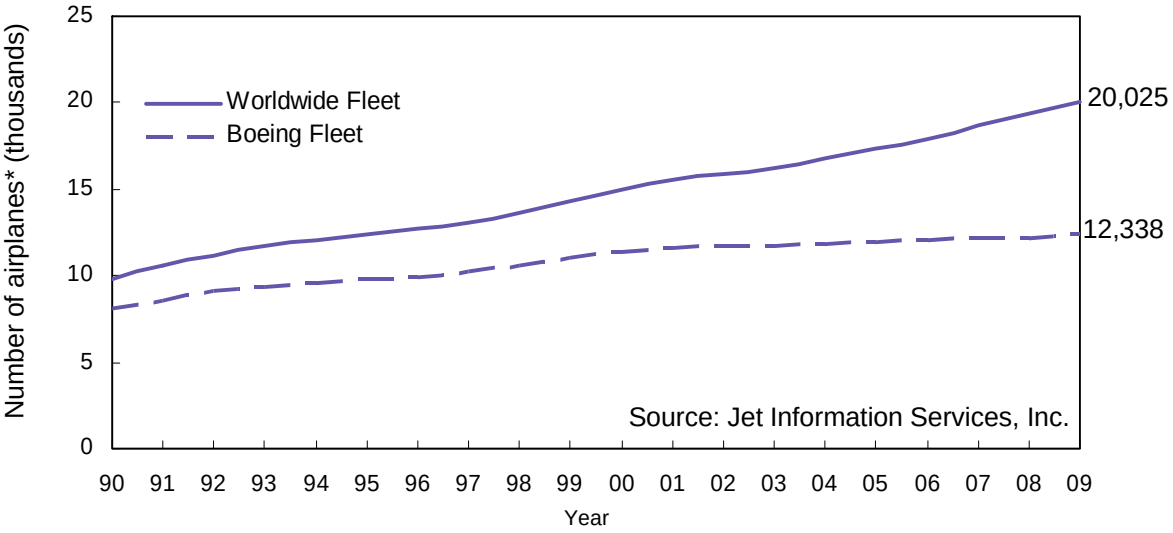
Departures, Flight Hours, and Jet Airplanes in Service*

Worldwide Operations 1990 Through 2009





- 563.5 million departures since 1959 (433.3 million on Boeing airplanes)
- 993.5 million flight hours since 1959 (768.7 million on Boeing airplanes)
- There were 37 (16 Boeing) significant types built by 16 original manufacturers that contributed to the hours, departures, and fleet numbers. There are currently four manufacturers of large commercial Western-built jet airplanes.

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

Accident Summary by Type of Operation

Worldwide Commercial Jet Fleet

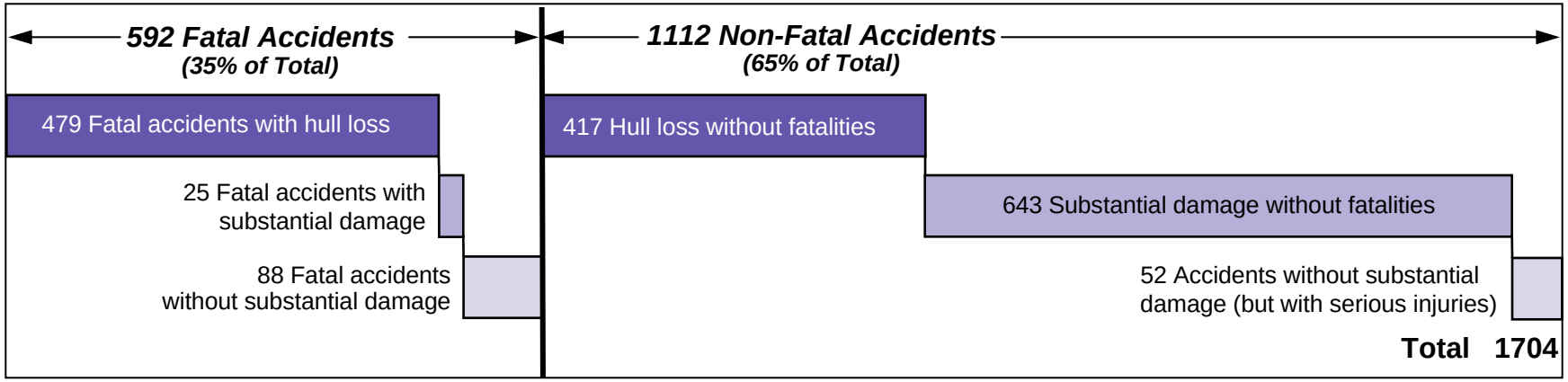
Type of operation	All Accidents		Fatal Accidents		Onboard Fatalities (External Fatalities)*		Hull Loss Accidents	
	1959-2009	2000-2009	1959-2009	2000-2009	1959-2009	2000-2009	1959-2009	2000-2009
Passenger	1,344	301	475	72	27,833 (778)	4,942 (171)	659	138
– *Scheduled*	*1,235*	*280*	*430*	*69*	*23,719*	*4,938*	*593*	*131*
– *Charter*	*109*	*21*	*45*	*3*	*4,114*	*4*	*66*	*7*
Cargo	244	81	73	14	255 (329)	42 (73)	164	52
Maintenance test, ferry, positioning, training, and demonstration	116	11	44	3	208 (66)	17 (0)	73	8
Totals	1,704	393	592	89	28,296 (1,173)	5,001 (244)	896	198
U.S. and Canadian Operators	530	77	176	14	6,153 (381)	355 (15)	217	32
Rest of the World	1,174	316	416	75	22,143 (792)	4,646 (229)	679	166
Totals	1,704	393	592	89	28,296 (1,173)	5,001 (244)	896	198

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

Accident Summary by Injury and Damage

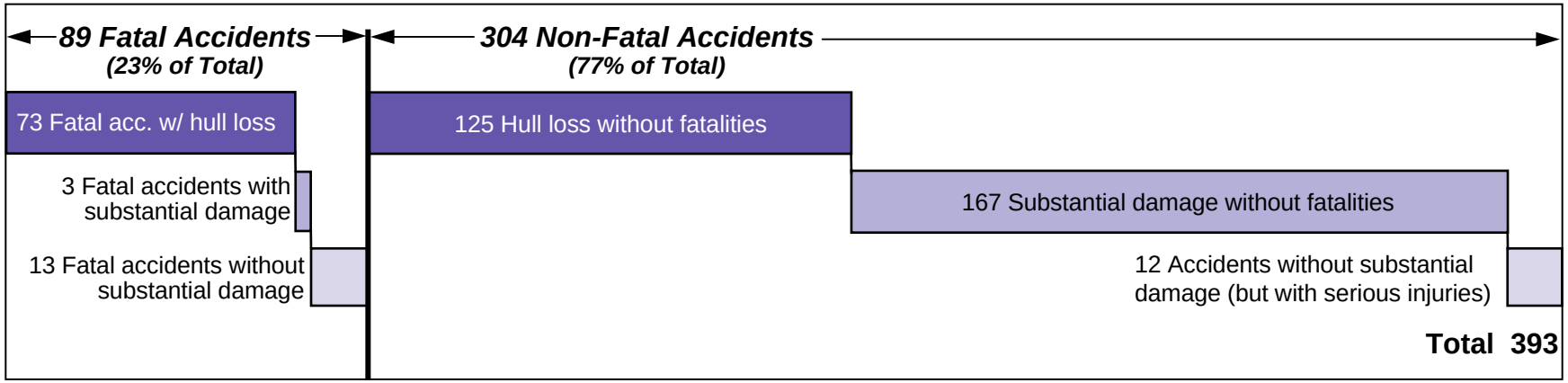
All Accidents – Worldwide Commercial Jet Fleet

1959 Through 2009



Number of Accidents

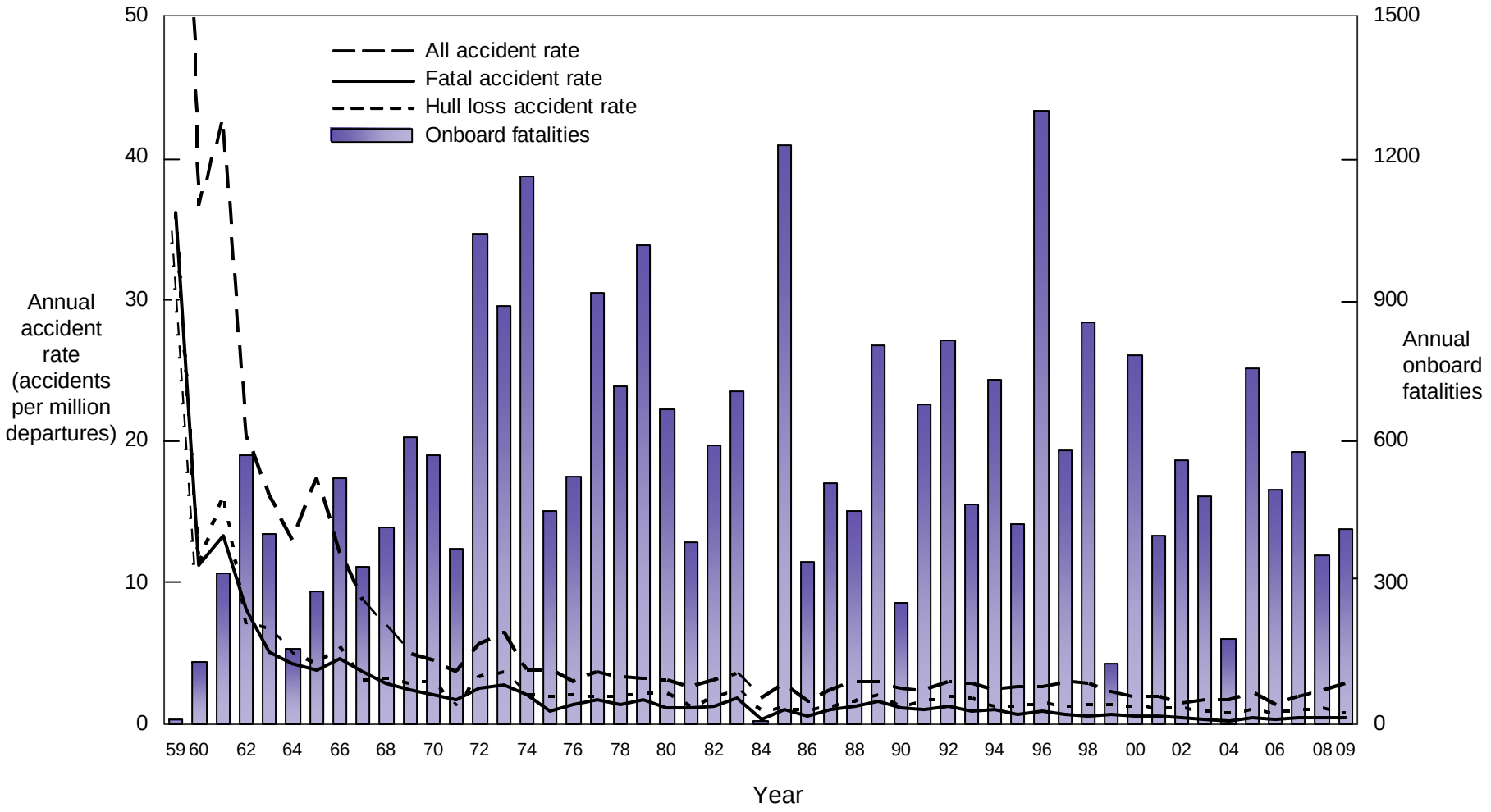
2000 Through 2009



Number of Accidents

Accident Rates and Onboard Fatalities by Year

Worldwide Commercial Jet Fleet – 1959 Through 2009



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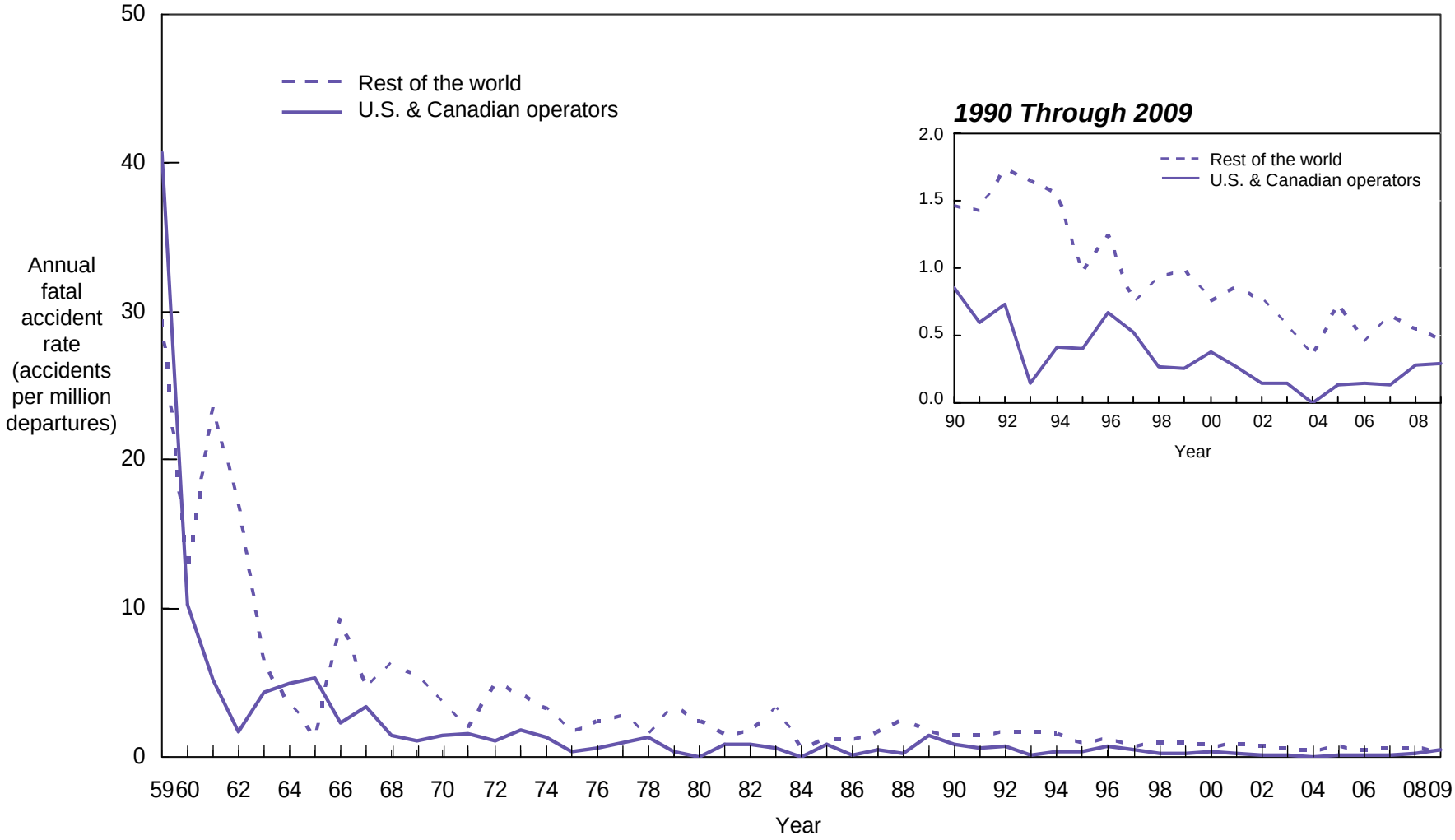
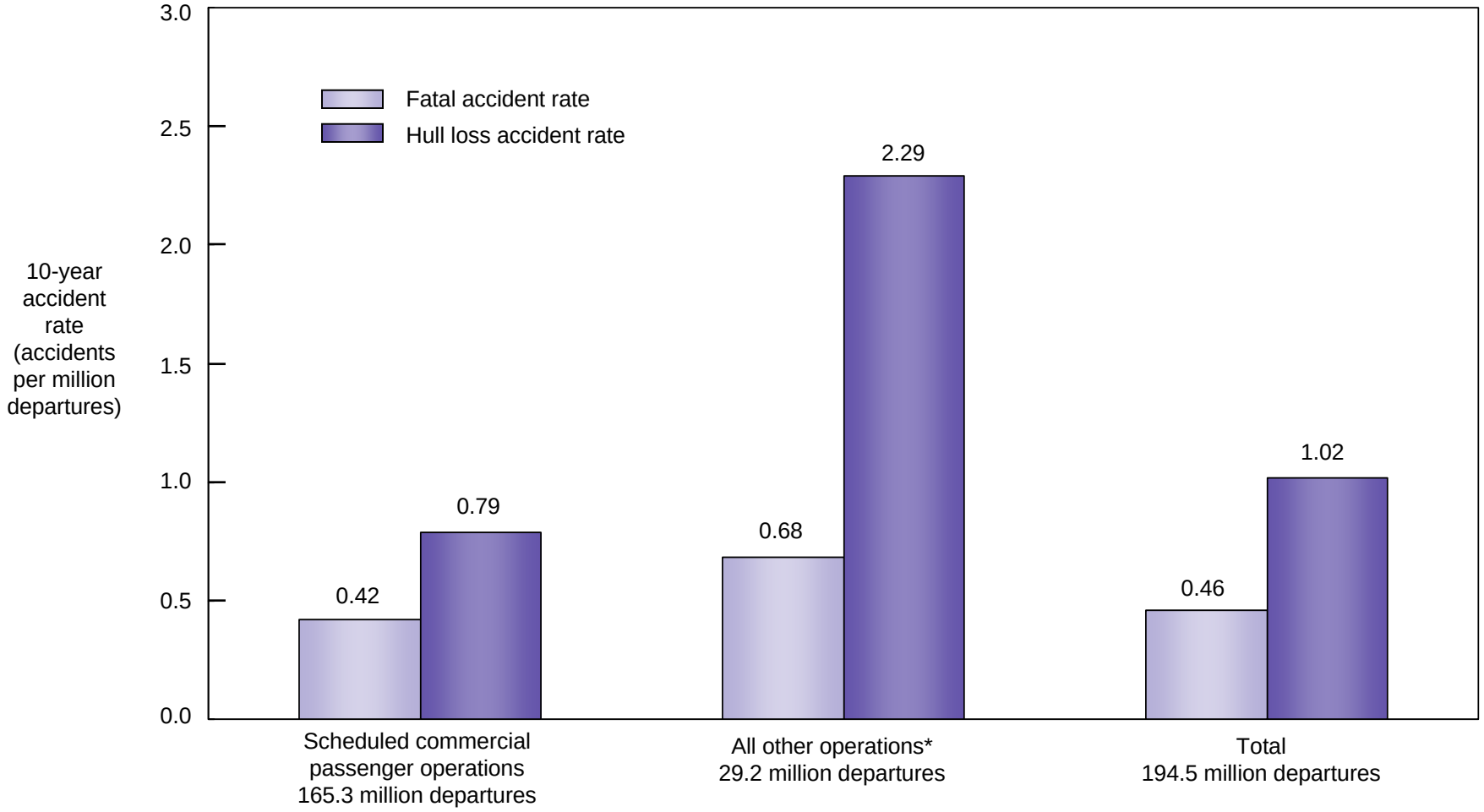
U.S. and Canadian Operators Accident Rates by Year

Fatal Accidents – Worldwide Commercial Jet Fleet – 1959 Through 2009



10-Year Accident Rates by Type of Operation

Fatal and Hull Loss Accidents – Worldwide Commercial Jet Fleet – 2000 Through 2009



*Charter passenger, charter cargo, scheduled cargo, maintenance test, ferry, positioning, training, and demonstration flights

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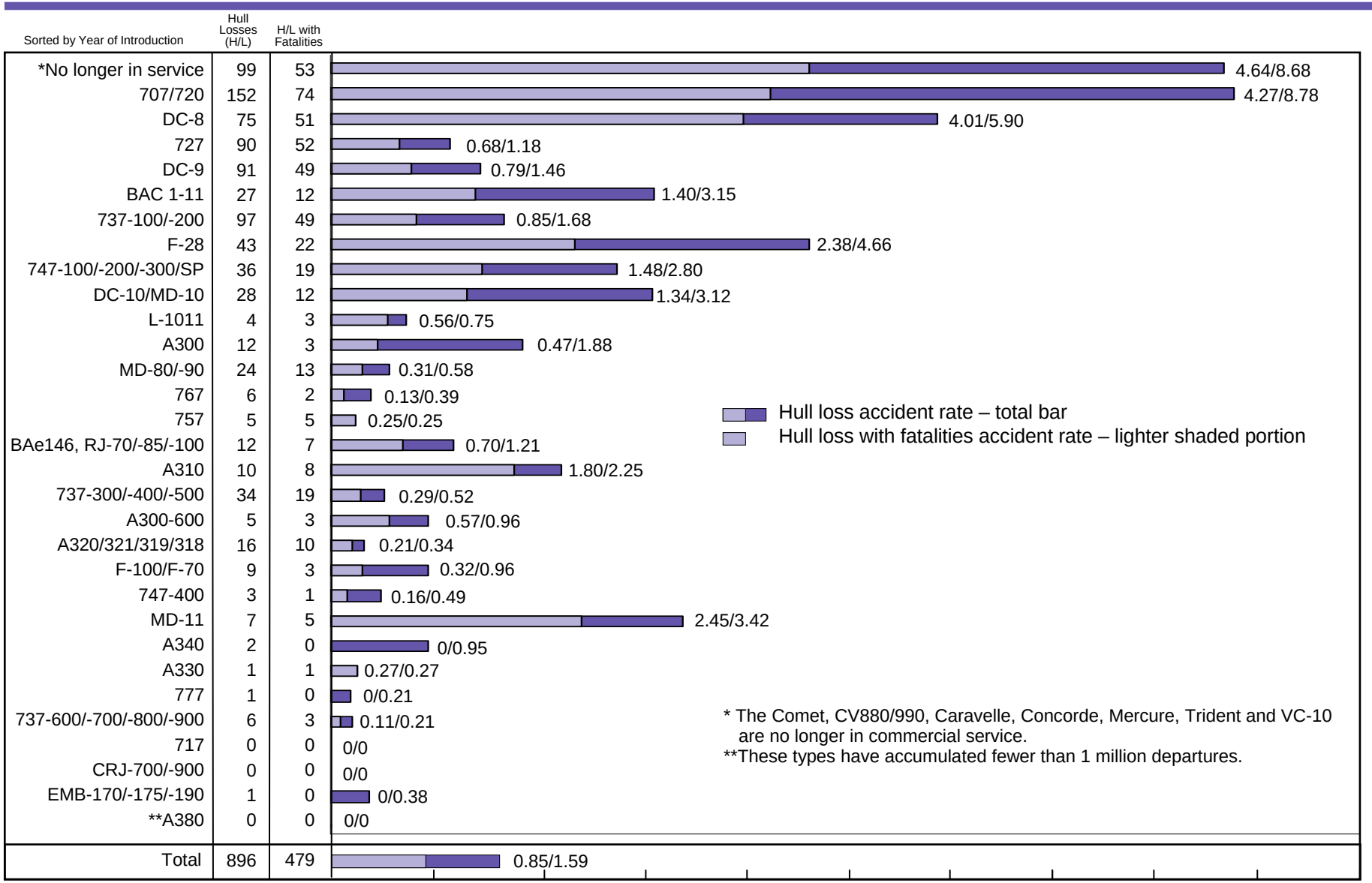
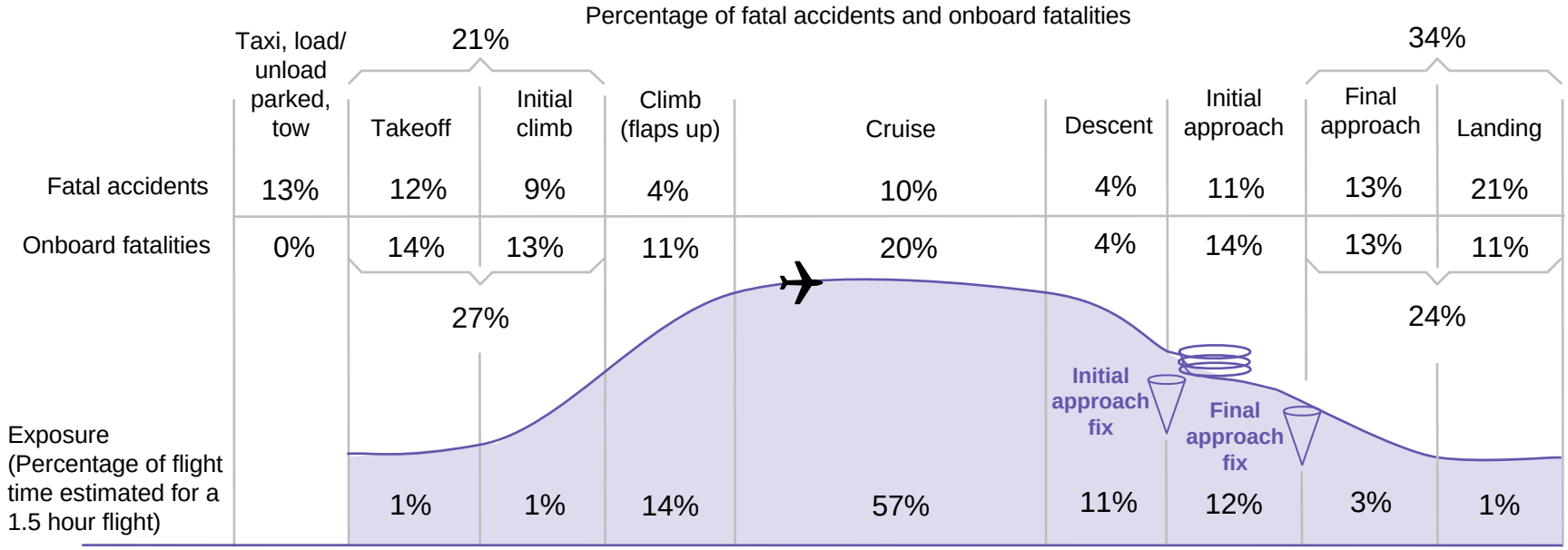
Accident Rates by Airplane Type

Hull Loss Accidents – Worldwide Commercial Jet Fleet – 1959 Through 2009

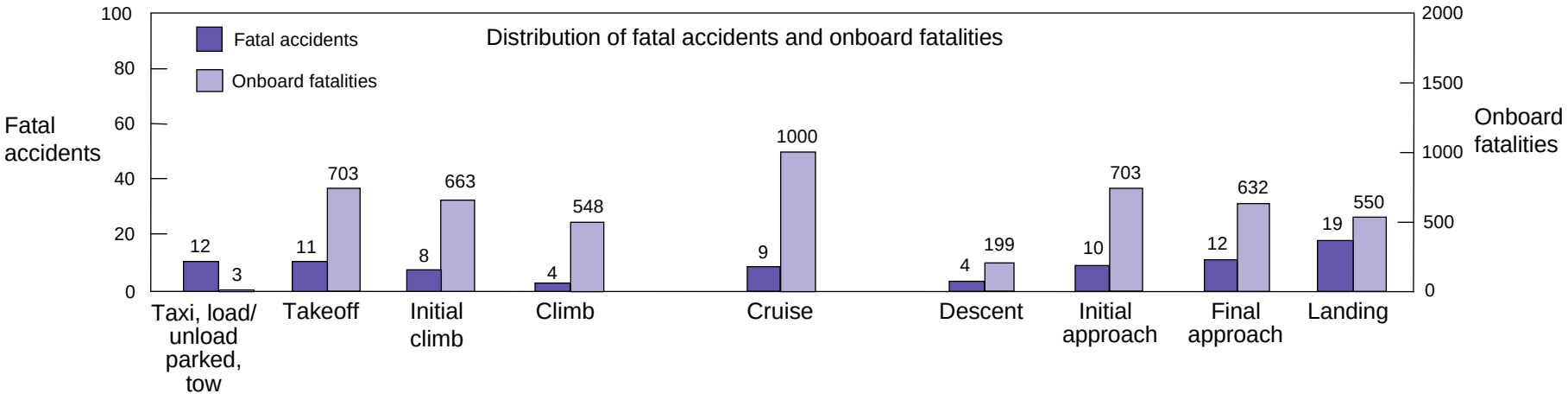


Fatal Accidents and Onboard Fatalities by Phase of Flight

Worldwide Commercial Jet Fleet – 2000 Through 2009



Percentages may not sum to 100% due to numerical rounding.



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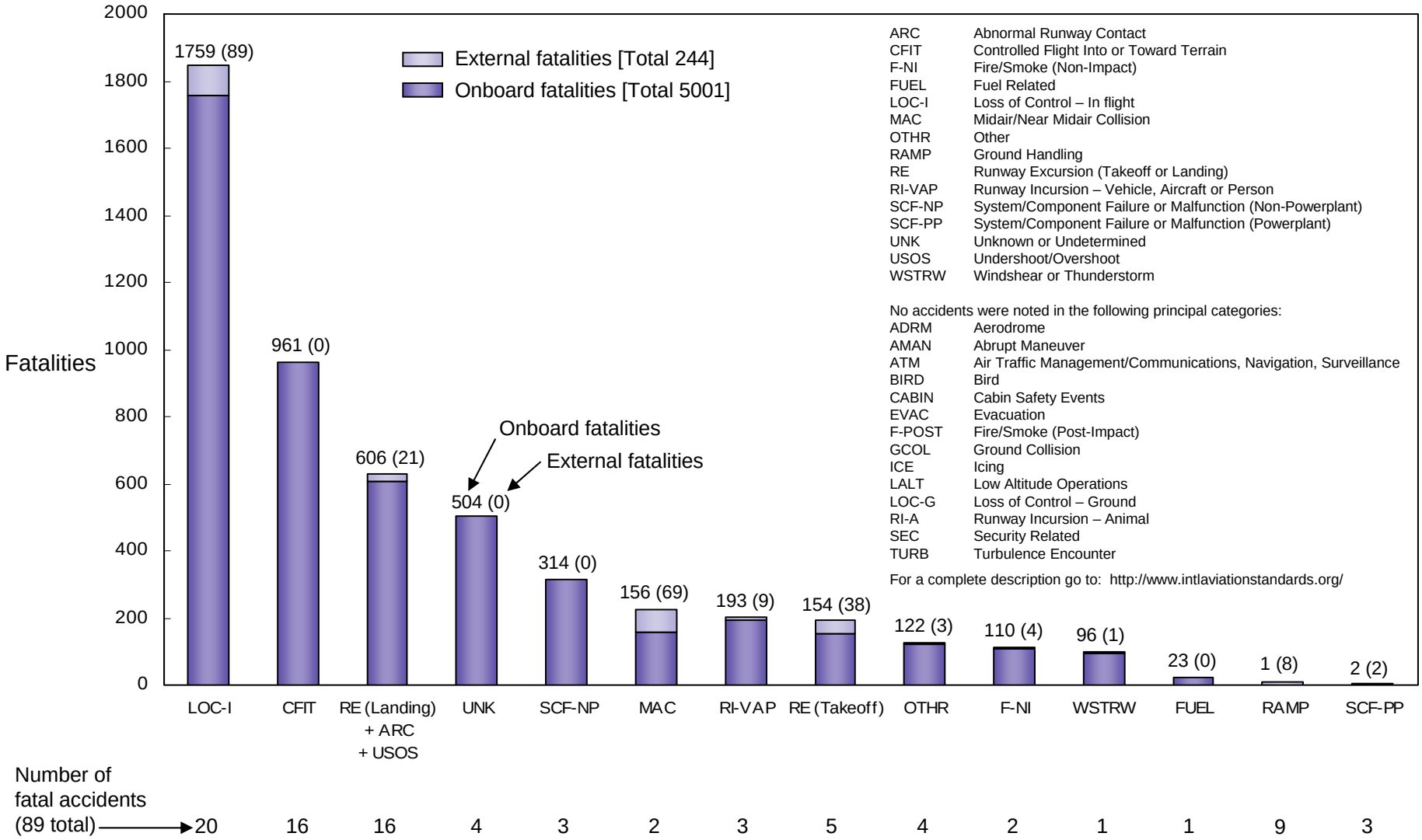
Fatalities by CAST/ICAO Common Taxonomy Team (CICTT) Aviation Occurrence Categories

Fatal Accidents – Worldwide Commercial Jet Fleet – 2000 Through 2009



Note: Principal categories as assigned by CAST.

CAST/ICAO Common Taxonomy Team (CICTT) 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, transportation safety boards, ICAO, and members from Canada, the European Union, France, Italy, the Netherlands, the United Kingdom, and the United States. CICTT is co-chaired by a representative 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 the assignment of multiple categories as necessary to describe the accident or incident. Since 2001, the 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 accident to a single principal category. Those accident assignments and a brief description of the categories are reported in the preceding chart.

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

For a complete description of the categories go to: http://www.intlaviationstandards.org/

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