



ASN Database Standards

full introduction in definitions, metrics used

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Definitions

Accident (ICAO Annex 13)

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.

Hijack.

Hijack means the unlawful seizure or wrongful exercise or control of the aircraft (or the crew thereof).

Incident. (ICAO Annex 13)

An occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation.

Other occurrence.

Safety occurrences that can not be defined as 'accident', or 'incident'. Usually these cases involve aircraft being damaged (beyond repair) on the ground as a result of hurricanes, typhoons, sabotage, hangar fires etc.

Unfiled occurrence.

Insufficient information is available to determine the exact type of occurrence.

Write-off / hull-loss (Aviation Safety Network).

Airplane damage that is beyond economic repair. Hull loss / write-off also include events in which:

- Airplane is missing
- Search for the wreckage has been terminated without it being located
- Airplane is substantially damaged and inaccessible

Status:

Status of the information. *Final* means that the official final investigation report was used to compile the accident description. *Preliminary- Official* means that the official preliminary investigation report was used and *Preliminary* means press information and other unofficial information was used.

Date:

Date of occurrence (local time), format DD MMM YYYY. DD or MMM becomes XX or XXX if the exact day or month of an occurrence is unknown.

Time:

Time of the accident – local time.

**Note: for approx. 200 occurrences UTC time is mentioned; this needs to be converted to local time. Especially for older accidents this can be difficult as research needs to be done regarding dates when daylight saving time became into effect.*

Type:

Manufacturer and exact model involved in the accident. For Boeing models for instance a (first) customer code is being used. The second and third digits indicate this code.

Customer code for Boeing 747-206 is '06', which is KLM.

Where possible the name of the manufacturer is used at the time the airplane in question was built. For example, the MD-11 remains "McDonnell Douglas MD-11" and does not become Boeing MD-11 or Boeing (McDD) MD-11.

Operator / Operating for:

The company, organisation or individual operating the aircraft at the time of the accident. This does not necessarily have to be the owner.

Leased from:

The company, organisation or individual that owns the aircraft, but did not operate it at the time of the accident.

Registration:

The registrationmark applied on the the aircraft at the time of the accident. Airplanes involved in some occurrences carried illegal/unofficial registration marks. In these cases the unofficial registration is given.

Msn / C/n:

Manufacturer serial number/construction number. Some manufacturers like Boeing and McDonnell Douglas include the line number, preceded by a /. Thus a Boeing 767, c/n 24542/28 means it has construction number 24542, and that it is the 28th B767 off the production line. Construction numbers for each manufacturer are usually unique.

Year built:

Year the aircraft in question was manufactured.

Engines:

Number and type (model and mark) of engines.

Total airframe hrs:

Total airframe hours at the time of the accident.

Cycles:

Total number of take-offs and landings at the time of the accident.

Crew:

Exact number of flight- and cabincrew members aboard the aircraft at the time of departure, and number of passengers fatally injured as a direct result of the accident. An injury is classified as fatal if death results from the injury within 30 days from the date of the accident (ICAO) Deadheading crewmembers are judged 'passengers'.

Passengers:

Number of passengers aboard the aircraft at the time of departure, and number of passengers fatally injured as a direct result of the accident.

An injury is classified as fatal if death results from the injury within 30 days from the date of the accident (ICAO)

Total: Number of occupants (crew + passengers) aboard the aircraft at the time of the accident, and number of occupants fatally injured as a direct result of the accident. An injury is classified as fatal if death results from the injury within 30 days from the date of the accident (ICAO).

Ground casualties:

Number of fatalities on the ground as a direct result of the occurrence. Ground casualties exclude fatalities as a result of an airplane collision on the ground.

See also: COLLISION CASUALTIES

Collision casualties:

Number of fatalities aboard other aircraft involved in collision accidents.

Airplane damage:

Describes the amount of damage to the airplane as a result of the occurrence. Possible values are: Written off (See also: DEFINITIONS), Substantial, Minor, None, and Unknown.

Airplane fate:

Describes the amount of damage to the airplane as a result of the occurrence. Possible values are: Written off (See also: DEFINITIONS), Substantial, Minor, None, and Unknown.

Location:

Location

Exact location of the accident, or the distance from the crash location relative to the nearest significant inhabited place or airport. If the distance to the nearest city is not known, the name of a mountain(range) or sea/ocean is given. When the accident has occurred in open waters, the distance is marked as "off" (e.g. 15 km off Tokyo). If applicable the name of the sea is also mentioned between square brackets (e.g. 90 km SE off Panama [Gulf of Panama]).

The names of inhabited places are given as they were at the time of the accident. For example Sverdlovsk is used for Soviet-era accidents, while Ekaterinburg is used for post-Soviet-era accidents (see also Appendix 1).

Provinces, states and territories

For geographic locations in Brazil, Canada and the U.S.A. the provinces, states and territories are given using ISO 3166-2 abbreviation¹. For Argentina and Australia the provinces, states and territories are given using the IATA standard abbreviation.

Geographical region

The geographical region where the accident happened.

Accidents that have occurred more than 12 miles / 19,3 km offshore in open waters² are classified under one of the three oceans.

In most cases the geographical regions represent sovereign states. Exceptions are for instance: the Oceans (Atlantic, Indian and Pacific Ocean – see also Appendix 2) and geographical regions like Greenland, Hong Kong (a Special Administrative Region of China), Taiwan.

For each accident the current geographical region is given. Thus, a 1966 accident at Ljubljana (then part of Yugoslavia) is listed under "Slovenia" as Ljubljana is now part of Slovenia.

Spelling

Local (Romanized, if applicable) spelling is used. As a point of reference local governmental websites have been used, along with the Times Atlas of the World (comprehensive edition; 9th ed., 1994). The spelling of geographical names in this atlas is in accordance with the principles and practice of the British Permanent Committee on Geographical Names.

Phase:

Phase of flight. The flight phases are in accordance with the broad phases defined by the CAST/ICAO Common Taxonomy Team (CICTT), as laid down in the Phase of Flight Definitions document (October, 2002)³.

Nature:

Nature of the flight. For passenger flights 'domestic' or 'international' is added where known.

For a full list of flight natures used, see Appendix 3.

Departure airport:

Last airport of departure before the accident (between brackets if known the IATA airport code).

See also: LOCATION

¹ http://en.wikipedia.org/wiki/ISO_3166-2

² The International Law of the Sea states that countries can claim up to 12 miles of water to be theirs.

³ <http://66.89.54.47/index.cfm?fuseaction=standards.standards>

Destination airport:

Scheduled destination airport. In case of diversions, the intended destination airport is given (between brackets if known the IATA airport code).

See also: LOCATION

Flightnumber:

Flightnumber as assigned to the flight by the operator.

Narrative:

Description of the occurrence.

Probable cause:

The probable cause of the accident as established by the accident investigators. Causes between quotations marks are quoted from the official accident investigation report.

Follow-up / safety actions:

Actions taken by parties involved to prevent accident recurrence. A.o. airworthiness directives, safety recommendations etc.

Source:

Reference to an information source, used in the accident description.

Appendix 1 – former and and current city names

A list of former and current city names used on ASN.

Country name		
Former name	Current name	Year of change
Angola		
Nova Lisboa	Huambo	
Cameroon		
Fort Lamy	Ndjamena	1973
Chad		
Fort-Archambault	Sarh	
Congo		
Costermansville	Bukavu	1966 ?
Elizabethville	Lubumbashi	1966 ?
Leopoldville	Kinshasa	1966
Equatorial Guinea		
Macías Nguema Biyogo Island	Bioko Island	
India		
Bombay	Mumbai	1995
Madras	Chennai	1996
Kazakhstan		
Alma-Ata	Almaty	1994
Guryev	Atyrau	
Mauritania		
Port-Étienne	Nouadhibou	
Mozambique		
Lourenço Marques	Maputo	1975
Russia		
Gorkiy	Nizhniy Novgorod	1990
Kuybyshev	Samara	1991
Leningrad	Saint Petersburg	6-SEP-1991
Sverdlovsk	Ekaterinburg	1991
Voroshilovgrad	Lugansk	
Serbia and Montenegro		
Titograd	Podgorica	1992
Tajikistan		
Leninabad	Khudzhand	1992
Turkmenistan		
Krasnovodsk	Turkmanbashi	1993
Ukraine		
Zhdanov	Mariupol	
Zimbabwe		
Salisbury	Harare	18-APR-1982

Appendix 2 – Oceans

The three largest oceans and the seas which are part of these oceans.

Atlantic Ocean

includes Baltic Sea, Black Sea, Caribbean Sea, Davis Strait, Denmark Strait, part of the Drake Passage, Gulf of Mexico, Labrador Sea, Mediterranean Sea, North Sea, Norwegian Sea, almost all of the Scotia Sea, and other tributary water bodies. [CIA World Factbook]

Indian Ocean

includes Andaman Sea, Arabian Sea, Bay of Bengal, Flores Sea, Great Australian Bight, Gulf of Aden, Gulf of Oman, Java Sea, Mozambique Channel, Persian Gulf, Red Sea, Savu Sea, Strait of Malacca, Timor Sea, and other tributary water bodies. [CIA World Factbook]

Pacific Ocean

includes Bali Sea, Bering Sea, Bering Strait, Coral Sea, East China Sea, Gulf of Alaska, Gulf of Tonkin, Philippine Sea, Sea of Japan, Sea of Okhotsk, South China Sea, Tasman Sea, and other tributary water bodies. [CIA World Factbook]

Appendix 3 – Flight natures

Agricultural
Ambulance
Calibration/Inspection
Cargo
Delivery
Demonstration
Domestic Non Scheduled Passenger
Domestic Scheduled Passenger
Executive
Ferry/positioning
Fire fighting
First Flight
Illegal Flight
International Scheduled Passenger
Int'l Non Scheduled Passenger
Military
Military cargo
Military executive
Military passenger
Military test
Military training
Non Scheduled Passenger
Parachuting
Passenger
Photo/air-to-air
Private
Scheduled Passenger
Survey
Test
Training
Unknown

Appendix 4 – Sample record

Status: Final
Date: **13 MAY 2002**
Time: 17:37 EDT
Type: Boeing 767-3Y0(ER)
Operator: Air Canada
Registration: C-GHML
Msn / C/n: 24948/380
Year built: 1991
Total airframe hrs: 46830 hours
Engines: 2 Pratt & Whitney PW4060
Crew: 0 fatalities / 8 on board
Passengers: 0 fatalities / 177 on board
Total: 0 fatalities / 185 on board
Airplane damage: Substantial
Location: Toronto-Pearson International Airport, ON (YYZ) (Canada)
Phase: Approach
Nature: Domestic Scheduled Passenger
Departure airport: Vancouver International Airport, BC (YVR)
Destination airport: Toronto-Pearson International Airport, ON (YYZ)
Flightnumber: 116

Narrative:

On final approach approximately 10 miles from the airport, the flight crew received an aft cargo bay fire warning. The flight crew followed checklist procedures, activated the cargo bay fire extinguishers and declared an emergency. The fire indication went out some 20 to 30 seconds after activation of the fire extinguishers, but a slight smell of smoke was noticed by the cabin crew and flight crew. Flight 116 landed and stopped on the runway to allow airport firefighters to inspect the aircraft for fire. Firefighters, using infrared sensing equipment, did not detect any sign of fire. The flight crew taxied the aircraft to the terminal but stopped approximately 40 feet back from the gate to allow firefighters to open the aft cargo compartment for a detailed inspection. When the cargo door was opened, a significant amount of smoke was observed. Firefighters entered the cargo compartment and confirmed that the fire had been extinguished. TSB investigators discovered that an intense but relatively small fire had occurred, causing significant structural damage in the floor area of the aft cargo compartment. Before it was extinguished, the fire had progressed approximately 18 inches up the right side wall of the aircraft, outside the aft cargo compartment. The cargo bay fire-extinguishing system, a Halon-based system, effectively suppressed the fire before it could spread further. The fire appears to have been a direct result of an electrical failure of a heater tape used to prevent water lines from freezing. The electrical failure of the heater tape ignited the covering of the insulation blankets installed below the open cargo floor and some debris found in the area.

FINDINGS AS TO CAUSES AND CONTRIBUTING FACTORS: "1. The B110 heater ribbon attached to the water supply line failed at the site of a recent water line repair, which allowed the elements of the heater ribbon to electrically arc, providing a source of ignition to surrounding materials; 2. The polyethylene terephthalate (PET) covering material of the thermal acoustic insulation was contaminated. The contaminated material

provided an ignitable source of fuel for a self-sustaining fire; 3. The open cargo floor provided a trap that collected contaminants and debris in the bilge area of the cargo compartment; the debris and contaminants were an ignitable source of fuel to sustain a fire; 4. Circuit protection devices are designed to protect aircraft wiring and not aircraft components. The lack of circuit protection of the heater ribbon system permitted the heater ribbon failure to result in an arcing event."

Follow-up / safety actions:

During the inspection of this and other aircraft, additional examples of overheated and burned heater tapes were discovered. Affected systems were deactivated.

Source:

TSB