



AIRCRAFT GROUND INCIDENTS

AIRCRAFT INCIDENTS

Aviation incidents



An **aviation incident** is an occurrence, **other than an accident**, that **affects or could affect** the **safety** of aircraft operations. Examples of aviation incidents include near collisions, runway incursions, and unruly passenger incidents.



AIRCRAFT INCIDENT



Garuda Airlines – Boeing
B737-300 (PK-GGG) flight GA833

Aviation Incident



AIRCRAFT INCIDENT



LUFTHANSA – AIRBUS A340-313

Aviation Incident



AIRCRAFT ACCIDENTS

Aviation accidents



An **aviation accident** is an incident in which an aircraft is **damaged** or **destroyed** as a result of a collision, fire, structural failure, or other event. Aviation accidents can be caused by a variety of factors, including mechanical failure, pilot error, adverse weather conditions, and sabotage. Aviation accidents can result in **fatalities**, injuries, and damage to property.



AIRCRAFT ACCIDENT



British Airways – Boeing
B747-400 (G-BNLL) flight BA034

Aviation Accident





Ground Incidents (Generally Less Severe)



Jet Bridge / Stairs

- A jet bridge disconnects or moves unexpectedly during boarding.
- Ramp crew steps off the wrong way due to misalignment.
- Result: injury or equipment damage



Fuel Spill During Refueling

- A hose disconnects or a valve is left open, causing fuel to spill.
- Result: fire risk, cleanup required; sometimes leads to grounding of aircraft until safe.





Ground Incidents (Generally Less Severe)



Ground Crew Struck by Equipment

- A tug, forklift, or baggage cart hits a person on the ramp.
- Result: injury to ground personnel.



Incorrect Tow / Docking

- Aircraft is towed toward a wrong position or misaligned with a stand/parking spot.
- Result: minor scrape marks or damage to winglets/fairings; delays for inspection.



Foreign Object Damage (FOD) Event

- Loose debris (tools, covers, pieces of material) left on the ground.
- Result: engines or landing gear may be affected when the aircraft starts taxi/takeoff.





Ground Accidents (More Serious)

⚠️ Aircraft Struck by Another Aircraft / Vehicle

- Two aircraft move at the same time, or a vehicle enters the aircraft movement area incorrectly.
- Result: wing/body damage, possible injuries to crew/ground staff.

🔥 Fuel Truck Fire or Explosion

- Static discharge, wrong procedure, damaged hose, or valve failure ignites fuel vapors.
- Result: injuries, aircraft damage, major apron disruption.





Ground Accidents (More Serious)



Severe Ramp Overrun / Wrong-Side Damage

- Aircraft is pushed/towed and hits a barrier, hangar door, fuel station, or concrete structure.
- Result: structural damage.



Landing Gear Damage While Taxiing on the Ground

- Hitting debris or other structure that causes gear collapse or severe bending.
- Result: aircraft possibly cannot, requires emergency services and technicians





Ground Accidents (More Serious)



Aircraft Dropped or Unsecured During Maintenance

- A maintenance lift or jack fails, or aircraft isn't properly secured.
- Result: serious equipment and structural damage; risk to technicians.





Common “Ground” Scenarios



Runaway / Loss of Braking While Parked

- Parking brake ineffective or misapplied.
- Result: aircraft rolls and collides with objects/other aircraft.



Wing/Control Surface Damage from Ice/Snow Handling

- Scrapers or de-icing equipment contacts sensitive surfaces.
- Result: control issues, skin damage; aircraft may need inspection before departure.





Common “Ground” Scenarios



Incorrect Ground Safety Procedures During Engine Start

- Fire extinguishing equipment not positioned properly.
- Result: escalation risk if a fire occurs.





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Tailored Examples

Ground Incidents & Accidents



Boarding / Jet Bridge / Stairs (Often “Incidents”)

- **Wrong alignment of jet bridge** → crew steps causing slips/falls.
- **Jet bridge disconnect** while passengers are still boarding → panic + possible injury.
- **Wet stairs or handrail issues** → slip and fall on stairs.



Refueling (Can Become “Accidents” Fast)

- **Fuel hose misconnected** → spill, incorrect fueling amount, equipment damage.
- **Broken nozzle / valve leakage** → spill + fire risk.
- **Static discharge / ignition source near vapors** → hose fire or flash fire.
- **Incorrect fuel type** (wrong tank/grade) → contamination; aircraft may be grounded.





Tailored Examples

Ground Incidents & Accidents

Towing / Pushback / Docking (High Damage Potential)

- **Towbar/dolly not secured** → sudden movement, wing/fairing scraping.
- **Wrong guidance by marshaller** → aircraft towed into stand, barrier, or another aircraft.
- **Parking brake released too early** → aircraft rolls unexpectedly.

Maintenance / Jacks / Lifts (Serious Injuries Possible)

- **Aircraft not properly chocked/secured** → movement while technicians work.
- **Jack failure** (hydraulic leak, wrong placement, missing support) → structural damage.
- **Tool dropped into engine/bay** → later FOD event during start/taxi.





Tailored Examples

Ground Incidents & Accidents

De-icing / Ice Handling (Control Surface & Damage Risk)

- **De-icing fluid pooling / misapplication** → contamination, next-flight issues.
- **Scraper contacts sensitive surfaces** (elevators, spoilers) → dents/skin damage.
- **Incorrect holdover/temperature checks** → departure delay or safety risk.

Ramp Collisions (Typical “Accidents”)

- **Aircraft-to-vehicle collision** (baggage tug, forklift) → injuries to staff + aircraft paint/structure damage.
- **Vehicle enters active aircraft movement area** → near-miss becomes collision.
- **Wrong-time engine start sequence** (vehicle behind aircraft) → personnel struck.





Comprehensive Examples

Boarding / Jet Bridge / Stairs

Incident:

Slip/Fall on Wet Stairs

- 🧐 **What happened:** Passengers or crew slip due to rain/snow/ice residue.
- **Typical causes:** Wet steps, inadequate anti-slip treatment, poor lighting.
- **Likely outcomes:** Minor injuries; sometimes stairs/rail damage.
- **Prevention:** Drying protocols, stair mats/grit, improved lighting, signage.





Comprehensive Examples

Boarding / Jet Bridge / Stairs

Accident:

Jet Bridge Disconnect During Boarding

- **What happened:** Jet bridge unhooks or shifts while passengers are boarding.
- **Typical causes:** Incorrect latch/lock, maintenance mismatch, uneven ramp leveling.
- **Likely outcomes:** Injuries (falls/jamming), equipment damage; possible aircraft hold/repair.
- **Prevention:** Pre-operation checklist, latch verification, staff training.





Comprehensive Examples

Minor Fuel Spill During Connection

Incident:

-  **What happened:** Hose nozzle leaks or valve mis-seated.
- **Typical causes:** Worn seals, incorrect coupling, rushed procedures.
- **Likely outcomes:** Cleanup + inspection; usually limited damage.
- **Prevention:** Seal checks, slow “staged” coupling, spill kits readiness.





Comprehensive Examples

Fuel Contamination

Accident :

-  **What happened:** Wrong fuel grade/type or water contamination introduced.
- **Typical causes:** Wrong hose line, poor labeling control, sampling failure.
- **Likely outcomes:** Engine/airframe inspection + grounding; significant delays.
- **Prevention:** Line identification controls, sample verification, strict area access.





Comprehensive Examples

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Comprehensive Examples

Parking Brake Released Early

Incident:

- 🧑✈️ **What happened:** Aircraft creeps forward unexpectedly.
- **Typical causes:** Timing error in procedures, miscommunication.
- **Likely outcomes:** Near-miss, possible low-speed collision.
- **Prevention:** Standard handoff cues, “stop and confirm” policy before release.





Comprehensive Examples

Vehicle/Personnel Mispositioned During Push

Accident:

- 🚨 **What happened:** Person/vehicle enters aircraft movement path.
- **Typical causes:** Ramp traffic congestion, poor situational awareness.
- **Likely outcomes:** Struck-by injuries; aircraft damage if contact occurs.
- **Prevention:** Ramp traffic zoning, lights/signals, strict exclusion zones.





Comprehensive Examples

Fluid Coverage/Pooling Issue

Incident:

- 🌐 **What happened:** Fluid runs to areas it shouldn't, causing uneven removal.
- **Typical causes:** Poor application pattern, incorrect nozzle distance.
- **Likely outcomes:** Delays, rework, possible contamination concerns.
- **Prevention:** Correct spray parameters, pre/post inspection standards.





Comprehensive Examples

De-icing Procedure Failure

Accident:

-  **What happened:** Departure delayed due to incorrect holdover checks or missed contamination prevention.
- **Typical causes:** Incorrect temperature/holdover monitoring, documentation mistakes.
- **Likely outcomes:** Safety risk due to freezing risk, flight cancellation/grounding.
- **Prevention:** Two-person verification of holdover time/temp, standardized paperwork.





Comprehensive Examples

FOD From Tiedown/Spare Materials

Incident:

-  **What happened:** Covers, ropes, or small parts blow away.
- **Typical causes:** Poor secured storage, wind conditions.
- **Likely outcomes:** Engine/gear damage risk during taxi/takeoff.
- **Prevention:** Secure loose items, FOD walkdowns, dedicated wind checks.





Comprehensive Examples

Baggage Tug/Forklift Strikes Wing/Doors

Accident:

-  **What happened:** Vehicle reverses/turns incorrectly, impacts aircraft.
- **Typical causes:** Limited visibility, unsafe turning radius, driver distraction.
- **Likely outcomes:** Structural/skin damage; possible staff injuries.
- **Prevention:** Vehicle driver training, spotters, designated vehicle lanes.

