



GOVERNMENT OF INDIA
OFFICE OF THE DIRECTOR GENERAL OF CIVIL AVIATION
TECHNICAL CENTRE, OPP. SAFDARJUNG AIRPORT, NEW DELHI

AIR SAFETY CIRCULAR 3 OF 2012

File No. _____

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Subject: Notification of Incidents

1. **Introduction**

Rule 3 of the Aircraft Rules, 1937 defines the “incident” in relation to an aircraft, which means an occurrence taking place either on the ground or in flight, in which:

- a) The aircraft suffers damage or a person associated either with the maintenance or operation of aircraft, or both, suffers injury in circumstances other than those specified in the definition of "accident",
- b) The aircraft makes a forced landing,
- c) The aircraft lands at aerodrome in an unairworthy condition,
- d) The aircraft is compelled to land at the aerodrome of departure without completing the scheduled flight,
- e) The aircraft lands owing to conditions which make continuance of the flight inadvisable,
- f) The position of the aircraft becomes "unknown for any period", or
- g) The safety of the aircraft or its occupants or of any other person or property is jeopardised in any manner.

Rules 77B and 77C of the Aircraft Rules, 1937 deal with the “notification of incidents” and “Investigation of incidents” respectively.

In accordance with Rule 77B, it is incumbent on the part of pilot-in-command, the owner, the operator and the hirer of any such aircraft to notify the incident to Director General of Civil Aviation within 48 hours of its occurrence. Provided that in case of a serious incident, the information shall be sent as soon as possible by the quickest means available and in any case within 24 hours after the occurrence of such incident.

2. **Objective**

The incident reporting is an essential part of the overall monitoring function of the operator. The objective of incident reporting and investigation is to

contribute to the improvement of aviation safety. The detailed objectives of the incident reporting systems are:

- a) To enable assessment of safety implications of each occurrence, including previous similar occurrences, so that any necessary action is initiated to prevent similar occurrences in future.
- b) To ensure dissemination of information.

3. **Requirements**

The reportable occurrences listed in the Appendix 'A' which are likely to endanger the safety of aircraft operations would classify under the category of incidents. The reportable occurrences are broadly classified in the following areas:

- a) Aircraft technical
- b) Aircraft flight operations
- c) Aircraft maintenance and repair
- d) Air navigation services, facilities and ground services

The reportable occurrences shall be reported to the Director General of Civil Aviation (Attention: Director of Air Safety) and to the concerned Regional Controller of Air Safety. The information related to the incidents should be intimated to all concerned by the fastest means possible e.g. telephone, fax, etc. within a stipulated timeframe as indicated in Para 1.

Operators shall continue to report wildlife (bird/animal) strike incidents in accordance with the provisions of Air Safety Circular 2 of 2011.

This circular supersedes Air Safety Circular 5 of 1982.

(EK Bharat Bhushan)
Director General of Civil Aviation

To:

1. All Non Scheduled Operators
2. Private Operators
3. Airports Authority of India
4. Internal distribution as per list.

REPORTABLE OCCURRENCES

AIRCRAFT TECHNICAL

A) Structural

- Damage to a principal structural element that has not been qualified as damage tolerant (life limited element). Principal structural elements are those which contribute significantly to carrying flight, ground and pressurisation loads and whose failure could result in a catastrophic failure of the aircraft.
- Damage or defect (exceeding allowed tolerances) to a structural element whose failure could reduce the structural stiffness to such an extent that the required aeroelastic characteristics are no longer achieved.
- Damage to or defect of a structural element, which could result in the liberation of items of mass that may injure occupants of the aircraft.
- Damage to or defect of a structural element, which could jeopardise proper operation of systems.
- Loss of any part of the aircraft structure in flight.

B) Systems

- Loss, significant malfunction or defect of any system, sub-system, equipment, etc. when standard operating procedures, could not be satisfactorily accomplished.
- Inability of the crew to control the system e.g. uncommanded actions, incorrect and/or incomplete response, etc.
- Failure or malfunction of the protection device or emergency system associated with the system.
- Loss of redundancy of the system.
- Operation of any primary warning system associated with aircraft systems or equipment unless the crew conclusively establishes that the indication is false provided that the false warning did not result in a hazard arising from the crew response to the warning.
- Leakage of hydraulic fluids, fuel, oil or other fluids which may result in a fire hazard or possible hazardous contamination of aircraft structure, systems or equipment or risk to occupants.
- Malfunction or defect of any indication system which results in a possibility of misleading indications to the crew.
- Any failure, malfunction or defect in a system during critical phase of flight.
- Flight controls malfunction.

Examples of reportable occurrences resulting from the application of these generic criteria to specific systems are as follows:

1. Air conditioning/ventilation

- a) Complete loss of avionics cooling.
- b) Depressurization.

2. **Auto-flight system**
 - a) Failure of auto-flight system to achieve the intended operation while engaged.
 - b) Difficulty to control the aircraft linked to autoflight system functioning.
 - c) Failure of any auto-flight system disconnect device.
 - d) Uncommanded auto-flight mode change.
3. **Communications**
 - a) Failure or defect of passenger address system resulting in loss or inaudible passenger address.
 - b) Total loss of communication in flight.
4. **Electrical system**
 - a) Loss of one electrical system distribution system (AC/DC).
 - b) Total loss or loss of more than one electrical generation system.
 - c) Failure of the backup (emergency) electrical generating system.
5. **Cockpit/Cabin/Cargo**
 - a) Pilot seat control loss during flight.
 - b) Failure of any emergency system or equipment, including emergency evacuation signalling system, exit doors, emergency lighting, etc.
 - c) Loss of retention capability of the cargo loading system.
6. **Fire protection system**
 - a) Fire warnings, except those immediately confirmed as false.
 - b) Undetected failure or defect of fire/smoke detection/protection system, which could lead to loss or reduced fire detection/protection.
 - c) Absence of warning in case of actual fire or smoke.
7. **Flight controls**
 - a) Asymmetry of flaps, slats, spoilers etc.
 - b) Limitation of movement, stiffness or poor/delayed response in the operation of primary flight control systems or their associated sub-systems.
 - c) Flight control surface runaway.
 - d) Flight control surface vibration.
 - e) Mechanical flight control disconnection or failure.
 - f) Significant interference with normal control of the aircraft or degradation of flying qualities.
8. **Fuel system**
 - a) Fuel quantity indicating system malfunction resulting in total loss or erroneous indicated fuel quantity on board
 - b) Leakage of fuel resulting in loss, fire hazard, significant contamination.
 - c) Malfunction or defects of the fuel jettisoning system resulting in inadvertent loss of significant quantity, fire hazard, hazardous contamination of aircraft equipment or inability to jettison fuel.
 - d) Fuel system malfunctions or defects having significant effect on fuel supply and/or distribution.
 - e) Inability to transfer or use total quantity of usable fuel.

9. Hydraulics

- a) Loss of hydraulic system.
- b) Leakage of hydraulic fluid.
- c) Loss of more than one hydraulic circuits.
- d) Failure of backup hydraulic system.
- e) Inadvertent Ram Air Turbine (RAT) extension.

10. Ice detection/protection system

- a) Undetected loss or reduced performance of the anti-ice/de-ice system.
- b) Loss of more than one of the probe heating systems.
- c) Inability to obtain symmetrical wing de-icing.
- d) Abnormal ice accumulation leading to significant effects on performance or handling qualities.
- e) Crew vision significantly affected.

11. Indicating/warning/recording systems

- a) Malfunction or defect of any indicating system with a possibility of misleading indications to the crew.
- b) Loss or malfunction of more than one display unit or computer display/warning function in a glass cockpit environment.

12. Landing gear system /brakes/tyres

- a) Brake fire.
- b) Significant loss of braking action.
- c) Unsymmetrical braking.
- d) Failure of landing gear free fall extension system.
- e) Unwanted gear or gear doors extension/retraction.
- f) Tyre burst.

13. Navigation systems

- a) Total loss or multiple navigation equipment failures.
- b) Total loss or multiple air data system equipment failures.
- c) Significant misleading indication.
- d) Significant navigation errors attributed to incorrect data.
- e) Unexpected deviations in lateral or vertical path not caused by pilot input.

14. Oxygen

- a) For pressurized aircraft: loss of oxygen supply in the cockpit.
- b) Loss of oxygen supply to a significant number of passengers (more than 10%).

15. Bleed air system

- a) Hot bleed air leak resulting in fire warning or structural damage.
- b) Loss of all bleed air systems.
- c) Failure of bleed air leak detection system.

C) Propulsion system

- Flameout, shutdown or malfunction of any engine.

- Overspeed or inability to control the speed of any high speed rotating component.
- Failure or malfunction of any part of an engine or powerplant resulting in any one or more of the following:
 - Non-containment of components/debris
 - Uncontrolled internal or external fire
 - Thrust in a different direction from that demanded by the pilot
 - Thrust reversing system failing to operate or operating inadvertently
 - Inability to control power, thrust or rpm
 - Failure of the engine mount structure
 - Partial or complete loss of a major part of the powerplant
 - Dense visible fumes or concentrations of toxic products sufficient to incapacitate crew or passengers
 - Inability to shutdown an engine by use of normal procedures
 - Inability to restart a serviceable engine
- An uncommanded thrust/power loss, change, etc. classified as a loss of thrust or power control.
- Any defect in a life controlled part causing retirement before completion of its full life.
- Defects of common origin resulting in in-flight engine shut down.
- An engine limiter or control device failing to operate when required or operating inadvertently.
- Exceedance of engine parameters.
- FOD resulting in damage.
- Failure or malfunction of any part of a propeller or powerplant resulting in any one or more of the following:
 - Overspeed of the propeller
 - Development of excessive drag
 - Thrust in the opposite direction to that commanded by the pilot
 - Release of the propeller or any major portion of the propeller
 - Failure that results in excessive unbalance
 - Unintended movement of propeller blades below the established minimum in-flight low-pitch position
 - Inability to feather the propeller
 - Inability to command a change in propeller pitch
 - Uncommanded change in pitch
 - Uncontrollable torque or speed fluctuation
- Damage or defect of main rotor gearbox/attachment resulting into in-flight separation of the rotor assembly and /or malfunctions of the rotor control.
- Damage to tail rotor, transmission and equivalent systems.
- Shut down or failure when the APU is required to be available by operational requirements.
- Inability to shut down the APU.
- Overspeed of APU.
- Inability to start the APU when needed for operational reasons.

D) Human Factors

- Any incident where any feature or inadequacy of the aircraft design contributes to a hazardous or catastrophic effect.

AIRCRAFT FLIGHT OPERATIONS

A) Operation of Aircraft

- Risk of collision with an aircraft, terrain or other object or an unsafe situation when avoidance action would have been appropriate.
- Avoidance manoeuvre required to avoid a collision with an aircraft, terrain or other object.
- Avoidance manoeuvre to avoid other unsafe situations.
- Take-off or landing incidents, including precautionary or forced landings. Incidents such as under-shooting, overrunning or running off the side of runways. Take-offs, rejected take-offs, landings or attempted landings on a closed, occupied or incorrect runway. Runway incursions.
- Inability to achieve predicted performance during take-off or initial climb.
- Critically low fuel quantity or inability to transfer fuel or use total quantity of usable fuel.
- Loss of control (partial or temporary) from any cause.
- Occurrences close to or above V1 resulting from or producing a hazardous or potentially hazardous situation (e.g. rejected take-off, tail strike, engine power loss etc.).
- Unintentional significant deviation from airspeed, intended track or altitude.
- Descent below decision height/altitude or minimum descent height/altitude without the required visual reference.
- Loss of position awareness relative to actual position or to other aircraft.
- Breakdown in communication between flight crew or between flight crew and others (cabin crew, ATC, engineering).
- Heavy landing - a landing requiring 'heavy landing check'.
- Exceedance of fuel imbalance limits.
- Incorrect receipt or interpretation of radiotelephony messages.
- Fuel system malfunctions or defects, which had an effect on fuel supply and/or distribution.
- Aircraft unintentionally departing a paved surface.
- Collision between an aircraft and any other aircraft, vehicle or other ground object.
- Inadvertent and/or incorrect operation of any controls.
- Inability to achieve the intended aircraft configuration for any flight phase (e.g. landing gear and doors, flaps, stabilisers, slats etc).
- Abnormal vibration.
- Operation of any primary warning system associated with manoeuvring of the aircraft e.g. configuration warning, stall warning (stick shake), over speed warning etc. unless the crew conclusively establishes that the indication is false provided that the false warning did not result in a hazard arising from the crew response to the warning.
- GPWS warning.
- ACAS RAs.
- Jet or prop blast incidents resulting in significant damage or serious injury.

B) Emergencies

- Fire, explosion, smoke or toxic or noxious fumes.

- Use of any non-standard procedure by the flight or cabin crew to deal with an emergency.
- Event leading to an emergency evacuation.
- Depressurisation.
- Use of any emergency equipment or prescribed emergency procedures in order to deal with a situation.
- Event leading to the declaration of an emergency.
- Failure of any emergency system or equipment, including exit doors, etc.
- Events requiring any emergency use of oxygen by any crew member.

C) Crew Incapacitation

- Incapacitation of any member of the flight crew.
- Incapacitation of any member of the cabin crew which renders them unable to perform essential emergency duties.

D) Meteorology

- Lightning strike which resulted in damage to the aircraft or loss or malfunction of any essential service.
- Hail strike which resulted in damage to the aircraft or loss or malfunction of any essential service.
- Severe turbulence resulting in injury to occupants or deemed to require a 'turbulence check' of the aircraft.
- Windshear encounter.
- Icing encounter resulting in handling difficulties, damage to the aircraft or loss or malfunction of any essential service.

AIRCRAFT MAINTENANCE AND REPAIR

- A) Incorrect assembly of aircraft parts or components found during inspection or test procedure.
- B) Hot bleed air leak resulting in structural damage.
- C) Any defect in a life controlled part causing retirement before completion of its full life.
- D) Any damage or deterioration (i.e. fractures, cracks, corrosion, delamination, disbonding etc) resulting from any cause (such as flutter, loss of stiffness or structural failure) to:
 - Primary structure or a principal structural element requiring repair/complete or partial replacement of the element
 - Secondary structure which may have endangered the aircraft
 - Engine, propeller or rotorcraft rotor system.
- E) Products, parts, appliances and materials of unknown or suspect origin.
- F) Misleading, incorrect or insufficient maintenance data or procedures that could lead to maintenance errors.
- G) Failure, malfunction or defect of ground equipment used for checking aircraft systems and equipment when the required routine inspection and test procedures did not clearly identify the problem and results in a hazardous situation.

AIR NAVIGATION SERVICES, FACILITIES AND GROUND SERVICES

A) Air Navigation Services

- Provision of significantly incorrect, inadequate or misleading information from any ground sources, e.g. Air Traffic Control (ATC), Automatic Terminal Information Service (ATIS), Meteorological Services, navigation databases, maps, charts, manuals, etc.
- Provision of less than prescribed terrain clearance.
- Provision of incorrect pressure reference data (i.e. altimeter setting).
- Incorrect transmission, receipt or interpretation of significant messages when this results in a hazardous situation.
- Separation minima infringement.
- Unauthorised penetration of airspace.
- Unlawful radio communication transmission.
- Failure of ANS ground or satellite facilities.
- Major ATC/ Air Traffic Management (ATM) failure or significant deterioration of aerodrome infrastructure.
- Aerodrome movement areas obstructed by aircraft, vehicles, animals or foreign objects, resulting in a hazardous or potentially hazardous situation.
- Errors or inadequacies in marking of obstructions or hazards on aerodrome movement areas resulting in a hazardous situation.
- Failure, significant malfunction or unavailability of airfield lighting.

B) Aerodrome and Aerodrome Facilities

- Significant spillage during fuelling operations.
- Loading of incorrect fuel quantities likely to have a significant effect on aircraft endurance, performance, balance or structural strength.
- unsatisfactory ground de-icing / anti-icing

C) Passenger Handling, Baggage and Cargo

- Significant contamination of aircraft structure, or systems and equipment arising from the carriage of baggage or cargo.
- Incorrect loading of passengers, baggage or cargo, likely to have a significant effect on aircraft mass and/or balance.
- Incorrect stowage of baggage or cargo (including hand baggage) likely to create a hazardous situation in the aircraft or to impede emergency evacuation.
- Inadequate stowage of cargo containers or other substantial items of cargo.
- Dangerous goods incidents.

D) Aircraft Ground Handling and Servicing

- Failure, malfunction or defect of ground equipment used for test or checking of aircraft systems and equipment when the required routine inspection and test procedures did not clearly identify the problem when this results in a hazardous situation.
- Loading of contaminated or incorrect type of fuel or other essential fluids (including oxygen and potable water).