AVIATION OCCURRENCE CATEGORIES

DEFINITIONS AND USAGE NOTES

October 2011 (4.2)

Occurrence categories are used to classify occurrences (that is, accidents and incidents) at a high level to permit analysis of the data in support of safety initiatives. Categories, such as CFIT and "loss of control" have been developed specifically for this purpose.

RECORD OF REVISIONS

Date	Version	Section	Revision
10/2011	4.2	System/Component Failure or Malfunction (Non-Powerplant) (SCF-NP)	Added bullets regarding unmanned aircraft systems: "For unmanned aircraft, includes failure or malfunction of ground-based, transmission, or aircraft-based communication systems or components –or– datalink systems or components." and "Includes failures/malfunctions of ground-based launch or recovery systems equipment."
10/2011	4.2	Loss of Control- Inflight	Added bullet for unmanned aircraft systems: "For unmanned aircraft events, includes hazardous outcomes involving deviation from intended flightpath associated with anticipated or unanticipated loss of datalink. However, if loss of datalink is the direct result of a system/component failure or malfunction, code the occurrence as system/component failure or malfunction – non powerplant (SCF-NP) only."
5/2011	4.1.5	Document	Reformatted document
5/2011	4.1.5	Attachment A	Added BIRD, CTOL, EXTL, GTOW, LOLI and UIMC categories to groupings and alphabetized groupings.
5/2011	4.1.5	Introduction	Replaced the ICAO and CAST contacts with new CICTT email address
4/2011	4.1.5	Entire Document	Alphabetized entries and fixed formatting
4/2011	4.1.5	System/Component Failure or Malfunction (Non-Powerplant) (SCF-NP)	Modified usage notes for Helicopters: replaced "Rotorcraft cyclic, collective, and tail rotor drive and control system failures/malfunctions" with "Rotorcraft main rotor and tail rotor system, drive system and flight control failures or malfunctions"
4/2011	4.1.5	System/Component Failure or Malfunction (Powerplant) (SCF-PP)	Modified usage notes for Helicopters: replaced "rotors, propeller/main rotor drive train (gearbox, transmission)" with "propeller system and engine gearbox"; replaced "Rotorcraft cyclic, collective and tail rotor drive and control failures " with "Rotorcraft main rotor and tail rotor system, drive system and flight control failures"
4/2011	4.1.5	Controlled Flight Into or Toward Terrain (CFIT)	Added usage notes for Helicopter operations
4/2011	4.1.5	Ground Collision (GCOL)	Added "on designated taxiways" to note
4/2011	4.1.5	Low Altitude Operations (LALT)	Added "on designated taxiways" to note 1; deleted note 2
4/2011	4.1.5	Low Altitude Operations (LALT)	Modified usage notes, added "with airplanes" after "scud running"
4/2011	4.1.5	Collision with Obstacle(s) During Take-off and Landing (CTOL)	Modified usage notes, added the phrase "For all aircraft (excluding rotorcraft),"

Date	Version	Section	Revision
10/2008	4.1.4	Collision with objects during take-off and landing (CTOL)	Added CTOL to taxonomy
10/2008	4.1.4	Bird (BIRD)	Added Bird category to taxonomy
9/2008	4.1.4	Abnormal Runway Contact (ARC)	Added usage notes on landing for Helicopters and Gliders
9/2008	4.1.4	Loss of Control – In-flight (LOC-I)	Added usage notes for Helicopter stalls and power settling.
9/2008	4.1.4	Ground Handling (RAMP)	Added usage notes for Helicopters
9/2008	4.1.4	Cabin Safety Events (CABIN)	Modified usage notes for Helicopter
9/2008	4.1.4	Aerodrome (ADRM)	Modified usage notes for Helicopter landing
9/2008	4.1.4	Controlled Flight Into or Towards Terrain (CFIT)	Modified usage notes for obstacles on ground
9/2008	4.1.4	Low Altitude Operations (LALT)	Modified usage notes with qualifiers of low flying
9/2008	4.1.4	Evacuation (EVAC)	Added usage notes for ditching
9/2008	4.1.4	Fuel Related (FUEL)	Added "ice" in usage notes for contamination
9/2008	4.1.4	Ground Collision (GCOL)	Modified usage notes, added "ground' qualifier
9/2008	4.1.4	Loss of Control - Ground (LOC-G)	Added usage notes for Helicopter rollover occurrences
9/2008	4.1.4	Airprox/ TCAS Alert/ Loss of Separation/Near MidAir Collisions/Midair Collisions (MAC)	Added ACAS in the title for Helicopters
9/2008	4.1.4	Controlled Flight Into or Towards Terrain (CFIT)	Modified usage notes for obstacles on ground
9/2008	4.1.4	Low Altitude Operations (LALT)	Modified usage notes with qualifiers of low flying
9/2008	4.1.4	Evacuation (EVAC)	Added usage notes for ditching
9/2008	4.1.4	Fuel Related (FUEL)	Added "ice" in usage notes for contamination
9/2008	4.1.4	Ground Collision (GCOL)	Modified usage notes, added "ground' qualifier
9/2008	4.1.4	Loss of Control - Ground (LOC-G)	Added usage notes for Helicopter rollover occurrences
9/2008	4.1.4	Airprox/ TCAS Alert/ Loss of Separation/Near MidAir Collisions/Midair Collisions (MAC)	Added ACAS in the title for Helicopters
9/2008	4.1.4	Runway Excursion (RE)	Added usage notes for Helicopters departing from helidecks and heliports

Date	Version	Section	Revision
9/2008	4.1.4	Runway Incursion - Animal (RI-A)	Modified usage notes for Helicopter encounters, changed cockpit crew to flight crew
9/2008	4.1.4	Runway Incursion-Vehicle, Aircraft, or Person (RI-VAP)	Modified usage notes for Helicopter encounters
9/2008	4.1.4	Undershoot/Overshoot (USOS)	Modified usage notes for Helicopter operations
9/2008	4.1.4	External Load Related Occurrences (EXTL)	Category Added for Helicopter operations
9/2008	4.1.4	Loss of lifting conditions en-route (LOLI)	Category Added for Light Aircraft operations
9/2008	4.1.4	Glider towing related events (GTOW)	Category Added for Light Aircraft operations
9/2008	4.1.4	Wind shear or Thunderstorm (WSTRW)	Usage notes modified to include Lightning Strikes
2/2006	4.1.3	Introduction	Replaces ICAO co-chair with Yuri Fattah
11/2005	4.1.2	Loss of Control – Ground (LOC-G)	Third bullet: Replaced RI-VA with RI-VAP and replaced RI-O with RI-A.
11/2005	4.1.2	Airprox/TCAS Alert/Loss of Separation/Near Midair Collisions/Midair Collisions (MAC)	Title: Replaced Midair/Near Midair Collisions with Airprox/TCAS Alert/Loss of Separation/Near Midair Collisions/Midair Collisions (MAC)
11/2005	4.1.2	Airprox/TCAS Alert/Loss of Separation/Near Midair Collisions/Midair Collisions (MAC)	Third bullet: Added
11/2005	4.1.2	Airprox/TCAS Alert/Loss of Separation/Near Midair Collisions/Midair Collisions (MAC)	Fourth bullet: Added
10/2005	4.1	Rewording of the Mac category, addition of two items to the usages notes	Midair/Near Midair Collision/Loss of Separation/TCAS Alert/Airprox (MAC)
6/2004	4.1	Executive Summary	Added Corey Stephens as the CAST Co-chair
6/2004	4.1	Abnormal Runway Contact (ARC)	Fourth bullet: Added
6/2004	4.1	Abrupt Maneuver (AMAN)	Third bullet: Added
6/2004	4.1	Wind shear or Thunderstorm (WSTRW)	First bullet: Deleted the term "only."

TABLE OF TERMS

INTRODUCTION

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). The team was charged with developing common taxonomies and definitions for aviation accident and incident reporting systems. The common taxonomies and definitions are intended to improve the aviation community's capacity to focus on common safety issues. CICTT includes experts from air carriers, aircraft manufacturers, engine manufacturers, pilot associations, regulatory authorities, transportation safety boards, and ICAO, and members from Canada, the European Union, France, Italy, Japan, the Netherlands, the United Kingdom, and the United States. CICTT is co-chaired by a representative from ICAO and a representative from CAST.

To accomplish its objectives, CICTT has developed the following common taxonomies and definitions: Phase of Flight, Occurrence Categories, Aircraft Make/Model/Series tables, Engine Make/Model tables, and a detailed taxonomy for accident/incident data systems.

It is important to note that CICTT does not expect governments, international organizations, and corporations to immediately change existing data systems or existing definitions. The intent is to provide "target" taxonomies and definitions for adoption by organizations planning for, and implementing new safety systems.

"Occurrence" is defined as "accident or incident" throughout this document. Generally, accidents and incidents differ only in the degree of injury sustained by persons involved or in damage sustained to the aircraft. Each category has a unique name and identifier to permit common coding in accident/incident systems, a text definition, and usage notes to clarify the category and aid in coding occurrences.

An important element of the occurrence category design is that it permits the association of multiple categories with an occurrence. Meaning, for example, if an engine failure occurred, AND loss of control followed, the occurrence would be coded in both categories. Multiple coding supports the primary focus of CICTT—accident *prevention*—in which every pertinent element should be investigated, recorded, and analyzed.

As an aid to organizations using the definitions, a sample table grouping the categories into major operational categories is also included as Attachment A.

Contact point for all CICTT work: CICTT@intlaviationstandards.org

ABNORMAL RUNWAY CONTACT *(ARC)*

Any landing or takeoff involving abnormal runway or landing surface contact.

Usage Notes:

- Events such as hard/heavy landings, long/fast landings, off center landings, crabbed landings, nose wheel first touchdown, tail strikes, and wingtip/nacelle strikes are included in this category.

- Gear-up landings are also recorded here. However, if a system/component failure or malfunction occurred, which led to the gear up landing, the event is also coded under the appropriate system/component failure or malfunction category.

- Do not use this category for runway contacts after losing control, e.g., runway contact after take-off.

- Occurrences in which the gear collapses during the take-off run or the landing roll are not included here except if a condition in the usage notes above has been met.

NOTE: Throughout this document the term runway or landing area is taken in its broadest sense and includes runways, landing strips, waterways, unimproved landing areas, and landing pads (which may include offshore platforms, building roofs, roads, ships, and fields), or other landing areas.

NOTE: Does not include helicopter hard/heavy landings after an off-field emergency autorotation when there was no intention to land before the autorotation was entered.

NOTE: Includes (tail) rotor striking the intended landing surface during take-off and landing. However, collisions with obstacles during take-off and landing, such as trees or walls, should be coded under TOL.

NOTE: Does not include off-field landing by gliders.

ABRUPT MANEUVER (*AMAN*)

The intentional abrupt maneuvering of the aircraft by the flight crew.

Usage Notes:

- This category includes the intentional maneuvering of the aircraft to avoid a collision with terrain, objects/obstacles, weather or other aircraft (Note: The effect of intentional maneuvering is the key consideration).

- Abrupt maneuvering may also result in a loss of control or system/component failure or malfunction. In this case the event is coded under both categories (e.g., AMAN and LOC–I, AMAN and SCF–NP, or AMAN and SCF–PP).

- Abrupt maneuvering may also occur on ground, examples include hard braking maneuver, rapid change of direction to avoid collisions, etc.

AERODROME *(ADRM)*

Occurrences involving Aerodrome design, service, or functionality issues.

Usage Notes:

- Includes deficiencies/issues associated with a State approved Aerodrome runways, taxiways, ramp area, parking area, buildings and structures, Crash/Fire/Rescue (CFR) services, obstacles on the Aerodrome property, lighting, markings, signage, procedures, policies, and standards.

- Examples include closed runways, improperly marked runways, construction interference, lighting failures, signage limitations, etc.

- Occurrences do not necessarily involve an aircraft.

- Effects of Aerodrome design are also included here. For example, building layout and architecture which leads to surface wind disruptions would be coded as both ADRM and WS/TRW or TURB as appropriate.

- Includes heliports (excludes unprepared or natural landing sites).

- Includes loose foreign objects on aerodromes and on heliports (excludes unprepared or natural landing sites).

AIRPROX/TCAS ALERT/LOSS OF SEPARATION/NEAR MIDAIR COLLISIONS/MIDAIR COLLISIONS (*MAC*)

Airprox, TCAS alerts, loss of separation as well as near collisions or collisions between aircraft in flight.

Usage Notes:

- Includes all collisions between aircraft while both aircraft are airborne.

- Both air traffic control and cockpit crew separation-related occurrences are included.

- To be used for AIRPROX reports

- Genuine TCAS alerts are included here.

ATM/CNS (*ATM*)

Occurrences involving Air traffic management (ATM) or communications, navigation, or surveillance (CNS) service issues.

Usage Notes:

- Includes ATC facility/personnel failure/degradation, CNS service failure/degradation, procedures, policies, and standards.

- Examples include, NAVAID outage, NAVAID service error, controller error, Supervisor error, ATC computer failure, Radar failure, and navigation satellite failure.

- Occurrences do not necessarily involve an aircraft.

NOTE: ATM includes all of the facilities, equipment, personnel, and procedures involved in the provision of State approved Air Traffic Services.

BIRD *(BIRD)*

Occurrences involving collisions/near collisions with bird(s)/wildlife.

Usage Notes:

- May occur in any phase of flight.

NOTE: Bird strikes were previously categorized as "other". Users may wish to update their historic data by replacing "other" with "BIRD" where the occurrence involved a bird/wildlife strike.

Miscellaneous occurrences in the passenger cabin of transport category aircraft.

Usage Notes:

- Includes significant events related to carry-on baggage, supplemental oxygen, or missing/non-operational cabin emergency equipment.

- Includes inadvertent deployment of emergency equipment.

- Includes medical emergency for a person other than a flight crewmember or a medical evacuation patient.

- Excludes turbulence and other weather-related events, which are covered under TURB, ICE, or WSTRW respectively.

Collision with obstacle(s) during take-off or landing whilst airborne.

Usage Notes:

- For all aircraft (excluding rotorcraft), to be used only in cases where the crew was aware of the true location of the obstacle, but its clearance from the aircraft flightpath was inadequate.

- Includes contact with obstacles, such as vegetation, trees and walls, snow drifts, power cables, telegraph wires and antennae, offshore platforms, maritime vessels and structures, land structures and buildings.

- Includes collisions during take-off to and landing from the hover.

- Includes water obstacles during take-off from water (e.g., waves, dead-heads, ships, swimmers).

- Not to be used for occurrences classified under CFIT, LOC–I or SCF–PP.

CONTROLLED FLIGHT INTO OR TOWARD TERRAIN *(CFIT)*

Inflight collision or near collision with terrain, water, or obstacle without indication of loss of control.

Usage Notes:

- CFIT is used only for occurrences during airborne phases of flight.

- CFIT includes collisions with those objects extending above the surface (for example, towers, trees, power lines, cable car support, transport wires, power cables, telephone lines and aerial masts).

- CFIT can occur during either Instrument Meteorological Conditions (IMC) or Visual Meteorological Conditions (VMC).

- Includes instances when the cockpit crew is affected by visual illusions or degraded visual environment (e.g., black hole approaches and helicopter operations in brownout or whiteout conditions) that result in the aircraft being flown under control into terrain, water, or obstacles.

- If control of the aircraft is lost (induced by crew, weather or equipment failure), do not use this category; use Loss of Control – Inflight (LOC–I) instead.

- For an occurrence involving intentional low altitude operations (e.g., crop dusting, aerial work operations close to obstacles, and Search and Rescue (SAR) operations close to water or ground surface) use the Low Altitude Operations (LALT) code instead of CFIT.

- Do not use this category for occurrences involving intentional flight into/toward terrain. Code all collisions with obstacles during take-off and landing under TOL. Code all suicides under Security Related (SEC) events.

- Do not use this category for occurrences involving runway undershoot/overshoot, which are classified as Undershoot/Overshoot (USOS).

- Includes flying into terrain during transition into forward flight.

- For helicopter operations, not to be used for take-off and landing phases, except when the occurrence involves flying into terrain without indication of loss of control during transition into forward flight.

EVACUATION (*EVAC*)

Occurrence where either; (a) person(s) are injured during an evacuation; (b) an unnecessary evacuation was performed; (c) evacuation equipment failed to perform as required; or (d) the evacuation contributed to the severity of the occurrence.

Usage Notes:

- Includes cases where an injury(ies) was (were) sustained during the evacuation through an emergency exit or main cabin door.

- Includes cases where the evacuation itself is the accident (in essence, had there not been an evacuation there would not have been an accident).

- An unnecessary evacuation is one that was either erroneously commanded by the crew or uncommanded.

- Only used for passenger carrying operations involving transport category aircraft.

- Includes evacuation following a ditching or survivable crash landing in water provided one of the conditions above is met.

EXTERNAL LOAD RELATED OCCURRENCES (*EXTL*)

Occurrences during or as a result of external load or external cargo operations.

Usage Notes:

- Includes cases where external load or the load lifting equipment used (e.g., long line, cable) contacts terrain, water surface, or objects.

- Includes cases where the load or, in the absence of a load, the load lifting equipment strikes or becomes entangled with the main rotor, tail rotor, or the helicopter fuselage.

- Includes injuries to ground crew handling external loads as result of contact with/dropping/inadvertent release of external load.

- Includes ground injuries to ground crew handling external loads due to the downwash effect or falling branch, trees, etc.

- Includes external hoist, human external cargo, and long lines.

- If the preparation of the external load by ground crew played a role, also code under RAMP.

- Failures or malfunctions of the onboard external load handling lifting equipment or release systems should be coded under SCF-NP, as these are considered to be aircraft systems.

FIRE/SMOKE (NON-IMPACT) (*F–NI*)

Fire or smoke in or on the aircraft, in flight, or on the ground, which is not the result of impact.

Usage Notes:

- Includes fire due to a combustive explosion from an accidental ignition source.

- Includes fire and smoke from system/component failures/malfunctions in the cockpit, passenger cabin, or cargo area.

- Non-combustive explosions such as tire burst and pressure bulkhead failures are coded under System/Component Failure – Non-Powerplant (SCF–NP).

- Fire/Smoke resulting from an accident impact is coded under Fire/Smoke (post-impact) (F–POST).

FIRE/SMOKE (POST-IMPACT) (*F–POST*)

Fire/Smoke resulting from impact.

Usage Notes:

- This category is only used for occurrences where post impact fire was a factor in the outcome.

- This category is only used in conjunction with another category. For example, a system/component failure that also results in a post-impact fire will be coded as SCF–PP and F–POST or SCF–NP and F–POST.

FUEL RELATED (*FUEL*)

One or more powerplants experienced reduced or no power output due to fuel exhaustion, fuel starvation/mismanagement, fuel contamination/wrong fuel, or carburetor and/or induction icing.

Usage Notes:

- The following fuel-related definitions are provided for clarity:
    - Exhaustion: No usable fuel remains on the aircraft.
    - Starvation/mismanagement: Usable fuel remains on the aircraft, but it is not available to the engines.
    - Contamination: Any foreign substance (for example, water, oil, ice, dirt, sand, bugs) in the correct type of fuel for the given powerplant(s).
    - Wrong fuel: Fuel supplied to the powerplant(s) is incorrect, for example, Jet A into a piston powerplant, 80 octane into a powerplant requiring 100 octane.

- Includes cockpit crew or ground crew-induced fuel-related problems that are not the result of mechanical failures. Interruptions of the fuel supply caused by mechanical failures are coded elsewhere as non-powerplant or powerplant system/component failures (SCF–NP or SCF–PP), as appropriate.

- Also used when the wrong fuel causes a powerplant failure (e.g., through detonation). In this case it should be coded as FUEL, not as a system/component failure or malfunction-powerplant (SCF–PP).

- Includes cases where there was a high risk of fuel exhaustion but there was no actual loss of power.

GLIDER TOWING RELATED EVENTS (*GTOW*)

Premature release, inadvertent release or non-release during towing, entangling with towing, cable, loss of control, or impact into towing aircraft/winch.

Usage Notes:

- Applicable both to aircraft under tow by winch or by another aircraft or to aircraft executing towing.

- To be used in events only after reaching airborne phase.

- Includes loss of control because of entering the towing aircraft wake turbulence and events where of airspeed is out of limits during tow.

GROUND HANDLING (*RAMP*)

Occurrences during (or as a result of) ground handling operations.

Usage Notes:

- Includes collisions that occur while servicing, boarding, loading, and deplaning the aircraft also during boarding and disembarking while helicopter is hovering.

- Includes injuries to people from propeller/main rotor/tail rotor/fan blade strikes.

- Includes pushback/powerback/towing events.

- Includes Jet Blast and Prop/rotor down wash ground handling occurrences.

- Includes aircraft external preflight configuration errors (examples: improper loading and improperly secured doors and latches) that lead to subsequent events.

- Includes all parking areas (ramp, gate, tiedowns).

- Except for powerback events, which are coded here, if a collision occurs while the aircraft is moving under its own power in the gate, ramp, or tiedown area, code it as a ground collision (GCOL).

- Includes operations at aerodromes, heliports, helidecks, and unprepared operating sites.

- If external loads involved, also code as EXTL.

GROUND COLLISION (*GCOL*)

Collision while taxiing to or from a runway in use.

Usage Notes:

- Includes collisions with an aircraft, person, animal, ground vehicle, obstacle, building, structure, etc., while on a surface other than the runway used for landing or intended for takeoff.

- Ground collisions resulting from events categorized under Runway Incursion (RI) or Ground Handling (RAMP) are excluded from this category.

NOTE: Taxiing includes ground and air taxiing for rotorcraft on designated taxiways.

ICING (*ICE*)

Accumulation of snow, ice, freezing rain, or frost on aircraft surfaces that adversely affects aircraft control or performance.

Usage Notes:

- Includes accumulations that occur inflight or on the ground (i.e., deicing-related).

- Carburetor and induction icing events are coded in the FUEL Related (FUEL) category.

- Windscreen icing which restricts visibility is also covered here.

- Includes ice accumulation on sensors, antennae, and other external surfaces.

- Includes ice accumulation on external surfaces including those directly in front of the engine intakes.

LOSS OF CONTROL – GROUND (*LOC-G*)

Loss of aircraft control while the aircraft is on the ground.

Usage Notes:

- Used only for non-airborne phases of flight, i.e., ground/surface operations.

- The loss of control may result from a contaminated runway or taxiway (e.g., rain, snow, ice, slush).

- The loss of control during ground operations can occur as the result of other occurrence categories as well. For example, LOC-G may result from a system/component failure or malfunction to the powerplant (SCF–PP) or non-powerplant (SCF–NP), or from evasive action taken during a Runway Incursion (RI–VAP, or RI–A). For these occurrences, the event is coded under both categories (e.g., LOC–G and SCF–PP, LOC–G and SCF–NP, or LOC–G and RI–VAP or RI–A).

- Do not use when a mechanical failure rendered the aircraft uncontrollable.

- Rotorcraft during sloping ground or moving helideck operations, dynamic rollover and ground resonance events are also included here.

Loss of aircraft control while, or deviation from intended flightpath, inflight.

Loss of control inflight is an extreme manifestation of a deviation from intended flightpath. The phrase "loss of control" may cover only some of the cases during which an unintended deviation occurred. It is, therefore, suggested that the occurrence title is reviewed and changed accordingly (for example, Deviation from Intended Flightpath- DEV).

Usage Notes:

- Used only for airborne phases of flight where aircraft control was lost.

- Loss of control can occur during either Instrument Meteorological Conditions (IMC) or Visual Meteorological Conditions (VMC).

- The loss of control during flight may occur as a result of a deliberate maneuver (e.g., stall/spin practice)

- Occurrences involving configuring the aircraft (e.g., flaps, slats, on-board systems, etc.) are included as well as rotorcraft retreating blade stall.

- Stalls are considered loss of control and are included here.

- Rotorcraft occurrences which involve power settling (vortex ring), or settling with power to ground contact are coded here and as ARC if during normal landing or takeoff.

- Rotorcraft External Load operations involving loss of control related to the external load should be coded as LOC-I as well as EXTL.

- Includes Rotorcraft "Loss of Tail Rotor Effectiveness".

- Includes loss of control during practice or emergency autorotation.

- Includes pilot-induced or assisted oscillations.
- For unmanned aircraft events, includes hazardous outcomes involving deviation from intended flightpath associated with anticipated or unanticipated loss of datalink. However, if loss of datalink is the direct result of a system/component failure or malfunction, code the occurrence as system/component failure or malfunction – non powerplant (SCF-NP) only.

- For icing-related events, which are also loss of control, code both LOC–I and ICE).

- If the loss of control is a direct result of a system/component failure or malfunction (SCF), code the occurrence as an SCF–NP, or SCF–PP only. However, loss of control may follow less severe system/component failures, and in this case, code both categories.

- Cockpit crew vision-related events and flight in degraded visual environments (for example, obscuration, black hole approach events, brownouts, or whiteout events), where the aircraft is flown under control into terrain, water, or obstacles, are coded under CFIT, not LOC–I.

LOSS OF LIFTING CONDITIONS EN-ROUTE (*LOLI*)

Landing en-route due to loss of lifting conditions.

Usage Notes:

- Applicable only to aircraft that rely on static lift to maintain or increase flight altitude, namely sailplanes, gliders, hang gliders and paragliders, balloons and airships.

- All static lift forms to be considered, including atmospheric lift, namely from Orographic, Thermal, Mountain Wave and Convergence Zone, and buoyancy lift namely from lighter than air gas or hot air.

- Also include motorglider and paramotor aircraft if operating under static atmospheric lift conditions, and the engine could not be started.

- If the aircraft was flying intentionally at low height above the terrain, use LALT instead (typical cases occur with gliders in competition flying).

LOW ALTITUDE OPERATIONS (*LALT*)

Collision or near collision with obstacles/objects/terrain while intentionally operating near the surface (excludes takeoff or landing phases).

Usage Notes:

- 'Terrain' includes water, vegetation, rocks, and other natural elements lying on, or growing out of, the earth.

- Includes ostentatious display, maneuvering at low height, aerobatics, sightseeing, demonstration flights, aerial inspection, avalanche mining, human hoist or human cargo sling, search and rescue operations, aerial application, intentional helicopter operations close to obstacles during aerial work and scud running with airplanes (ducking under low visibility conditions).

- Also includes intentional maneuvering in close proximity to cliffs, mountains, into box canyons, and similar flights where the aircraft aerodynamic capability is not sufficient to avoid impact.

- If there is a loss of control during low altitude operations, both loss of control – inflight (LOC–I) and LALT are coded.

NOTE: Excluding rotorcraft air taxi phase of flight on designated taxiways.

OTHER (*OTHR*)

Any occurrence not covered under another category.

RUNWAY EXCURSION (*RE*)

A veer off or overrun off the runway surface.

Usage Notes:

- Only applicable during either the takeoff or landing phase.

- The excursion may be intentional or unintentional. For example, the deliberate veer off to avoid a collision, brought about by a Runway Incursion. In this case, code both categories.

- Use RE in all cases where the aircraft left the runway/helipad/helideck regardless of whether the excursion was the consequence of another event.

RUNWAY INCURSION – ANIMAL (*RI–A*)

Collision with, risk of collision, or evasive action taken by an aircraft to avoid an animal on a runway or on a helipad/helideck in use.

Usage Notes:

- Includes encounters with wildlife on a runway in use.

- Includes instances where evasive action is taken by the flight crew that leads to a collision off the runway or to consequences other than a collision (e.g., gear collapsing).

- Runway incursions may occur at controlled or uncontrolled airports.

- Excludes unprepared/natural landing sites.

RUNWAY INCURSION – VEHICLE, AIRCRAFT OR PERSON (*RI–VAP*)

Any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle, or person on the protected area of a surface designated for the landing and take-off of aircraft.

Notes:

- From Procedures for Air Navigation Services – Air traffic Management (ICAO DOC 4444), first included in April 2004.

- Excludes unprepared/natural landing sites.

SECURITY RELATED (*SEC*)

Criminal/Security acts which result in accidents or incidents (per the International Civil Aviation Organization [ICAO] Annex 13).

Usage Notes:

- While security-related acts can lead to accidents as defined as by ICAO Annex 13, they are not considered accidents by some organizations. Regardless, these events have similar consequences in that they result in serious injury or death to person(s) and/or substantial damage to the aircraft. For these reasons, they are categorized as security-related occurrences for prevention purposes only.

- Examples include, a) hijacking and/or aircraft theft; b) interference with a crewmember (e.g., unruly passengers); c) flight control interference; d) ramp/runway/taxiway security; e) sabotage; f) suicide; and g) acts of war.

SYSTEM/COMPONENT FAILURE OR MALFUNCTION (NON-POWERPLANT) (*SCF–NP*)

Failure or malfunction of an aircraft system or component other than the powerplant.

Usage Notes:

- If the failure renders the aircraft uncontrollable it is coded as SCF–NP only, not as loss of control (LOC–I or LOC–G). However, if the failure does not render the aircraft uncontrollable, but leads to a loss of control, code the event under both SCF–NP and LOC–I or LOC–G, as appropriate.

- Rotorcraft main rotor and tail rotor system, drive system and flight control failures or malfunctions are also coded here.

- Includes errors or failures in software and database systems.

- Includes non-powerplant parts or pieces separating from an aircraft.

- For unmanned aircraft, includes failure or malfunction of ground-based, transmission, or aircraft-based communication systems or components –or– datalink systems or components.

- Includes failures/malfunctions of ground-based launch or recovery systems equipment.

- Includes all failures/malfunctions, including those related to or caused by maintenance issues.

Failure or malfunction of an aircraft system or component related to the powerplant.

Usage Notes:

- If the failure renders the aircraft uncontrollable it is coded as SCF–PP only, not as loss of control (LOC–I or LOC–G). However, if the failure does not render the aircraft uncontrollable, but leads to a loss of control, code the event under both SCF–PP and LOC–I or LOC–G, as appropriate.

- Includes failures or malfunctions of any of the following: propellers, propeller system and engine gearbox, reversers, and powerplant controls.

- Includes powerplant parts or pieces separating from a powerplant.

- Includes all failures/malfunctions, including those related to or caused by maintenance issues.

- Rotorcraft main rotor and tail rotor system, drive system and flight control failures or malfunctions are coded as non-powerplant failures (SCF–NP), not SCF–PP.

- The following fuel-related powerplant problems are coded under the category FUEL, not under the category SCF–PP: fuel exhaustion; fuel starvation/mismanagement; fuel contamination; wrong fuel; carburetor and induction icing.

NOTE: For sub-categorization of SCF–PP, a separate taxonomy has been developed and can be found on the CICTT website.

TURBULENCE ENCOUNTER (*TURB*)

In-flight turbulence encounter.

Usage Notes:

- Includes encounters with turbulence in clear air, mountain wave, mechanical, and/or cloud-associated turbulence.

- Wake vortex encounters are also included here.

- Flights into wind shear or thunderstorm-related turbulence are coded as WSTRW.

- Includes turbulence encountered by aircraft when operating around or at buildings, structures, and objects.

UNDERSHOOT/OVERSHOOT (*USOS*)

A touchdown off the runway/helipad/helideck surface.

Usage Notes:

- An undershoot/overshoot of a runway/helipad/helideck occurs in close proximity to the runway/helipad/helideck and includes offside touchdowns and any occurrence where the landing gear touches off the runway/helipad/helideck surface.

- Off-airport emergency landings are excluded from this category.

- To be used for occurrences during the landing phase.

- Includes offside touchdowns on heliports, helidecks and other defined areas to be used wholly or in part for the arrival, departure and surface movement of helicopters (does not include helicopter unprepared or natural landing sites).

UNINTENDED FLIGHT IN IMC (*UIMC*)

Unintended flight in Instrument Meteorological Conditions (IMC).

Usage Notes:

- May be used as a precursor to CFIT, LOC–I or LALT.

- Applicable if the pilot was flying according to Visual Flight Rules (VFR), as defined in Annex 2 – Rules of the Air – to the Convention on International Civil Aviation, and by any reason found oneself inadvertently in IMC.

- Only to be used when loss of visual references is encountered.

- Only to be used if pilot not qualified to fly in IMC and/or aircraft not equipped to fly in IMC.

UNKNOWN OR UNDETERMINED (*UNK*)

Insufficient information exists to categorize the occurrence.

Usage Notes:

- Includes cases where the aircraft is missing.

- Includes those occurrences where there is not enough information at hand to classify the occurrence or where additional information is expected in due course to better classify the occurrence.

WIND SHEAR OR THUNDERSTORM (*WSTRW*)

Flight into wind shear or thunderstorm.

Usage Notes:

- Includes flight into wind shear and/or thunderstorm-related weather.

- Includes inflight events related to hail.

- Includes events related to lightning strikes.

- Includes events related to heavy rain (not just in a thunderstorm).

- Icing and turbulence encounters are coded separately (see ICE and TURB).

ATTACHMENT A
SAMPLE OPERATIONAL GROUPING OF CATEGORIES

Airborne

ABRUPT MANEUVRE	AMAN
AIRPROX/TCAS ALERT/LOSS OF SEPARATION/NEAR MIDAIR COLLISIONS/MIDAIR COLLISIONS	MAC
CONTROLLED FLIGHT INTO/TOWARD TERRAIN	CFIT
FUEL RELATED	FUEL
GLIDER TOWING RELATED EVENTS	GTOW
LOSS OF CONTROL – INFLIGHT	LOC–I
LOSS OF LIFTING CONDITIONS EN-ROUTE	LOLI
LOW ALTITUDE OPERATIONS	LALT
UNINTENDED FLIGHT IN IMC	UIMC

Aircraft

FIRE/SMOKE (NON-IMPACT)	F–NI
SYSTEM/COMPONENT FAILURE OR MALFUNCTION (NON-POWERPLANT)	SCF–NP
SYSTEM/COMPONENT FAILURE OR MALFUNCTION (POWERPLANT)	SCF–PP

Ground Operations

EVACUATION	EVAC
FIRE/SMOKE (POST-IMPACT)	F–POST
GROUND COLLISION	GCOL
GROUND HANDLING	RAMP
LOSS OF CONTROL – GROUND	LOC–G
RUNWAY EXCURISION	RE
RUNWAY INCURSION – ANIMAL	RI–A
RUNWAY INCURSION – VEHICLE, AIRCRAFT OR PERSON	RI–VAP

Miscellaneous

BIRD	BIRD
CABIN SAFETY EVENTS	CABIN
EXTERNAL LOAD RELATED OCCURRENCES	EXTL
OTHER	OTHR
SECURITY RELATED	SEC
UNKNOWN OR UNDETERMINED	UNK

Non-aircraft-related

AERODROME	ADRM
ATM/CNS	ATM

Takeoff and Landing

ABNORMAL RUNWAY CONTACT	ARC
COLLISION WITH OBSTACLE(S) DURING TAKE-OFF AND LANDING	CTOL
UNDERSHOOT/OVERSHOOT	USOS

ATTACHMENT A
SAMPLE OPERATIONAL GROUPING OF CATEGORIES

Weather	
ICING	*ICE*
TURBULENCE ENCOUNTER	*TURB*
WIND SHEAR OR THUNDERSTORM	*WSTRW*