



Guidelines for reporting of occurrences

Safety Management System

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*CIVIL AVIATION
AUTHORITY*

Introduction

The purpose of this document is to provide the industry with guidelines regarding occurrences that may be reported either in the mandatory occurrence reporting system or the voluntary occurrence reporting system.

In support of the State Safety Programme (SSP) and service provider's Safety Management System (SMS), the Civil Aviation Authority established a voluntary reporting system (Central Reporting System). The purpose of this system is to capture hazards and incidents that are not captured in the mandatory reporting system (as per CAR part 12 provisions). Organisations, service providers and operators are required to establish safety data collection and analysis systems. This will enable service providers and operators to identify and capture hazards and use this data to perform safety risk assessment and implement the necessary measures to mitigate risks.

Data contained in the service providers'/operators'/organisations' collection systems must be forwarded to the regulator's data collection and analysis system (CRS). The data will be analysed and will enable the regulator to establish national safety performance targets, indicators and measurements.

This document (adapted from IATA and ICAO) contains examples of hazards, accidents and incidents that may be captured in the service provider's safety data collection and analysis system. It must be noted that the list is not exhaustive, but serves as a guide.

Organisations, service providers, operators, certificate holders and individuals are requested to forward the top 20 hazards contained in their Safety Data Collection and Processing Systems to the e-mail address below, as per the requirements of CATs 140.

sms@caa.co.za

Kindly direct all safety management system and state safety programme queries to:

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Accurate and timely reporting of relevant information related to hazards, incidents or accidents is a fundamental activity of safety management. The data used to support safety analyses are reported by multiple sources. One of the best sources of data is direct reporting by front-line personnel, since they observe hazards as part of their daily activities. A workplace in which personnel have been trained and are constantly encouraged to report their errors and experiences is a prerequisite for effective safety reporting.

There are five basic characteristics that are universally associated with effective safety reporting systems. Effective hazard reporting is a key component of safety management. Once reported, data on hazards can be analysed with other data sources to support the Safety Risk Management (SRM) and Safety Assurance (SA) processes.



Information

People are knowledgeable about the human, technical and organisational factors that determine the safety of the system as a whole.

Flexibility

People can adapt their reporting mode when facing unusual circumstances, shifting from the established mode to a direct mode, thus allowing information to quickly reach the appropriate decision-making level.

Learning

People have the competence to draw conclusions from safety information systems and the will to implement major reforms.

Accountability

People are encouraged (and rewarded) for providing essential safety-related information. However, there is a clear line that differentiates between acceptable and unacceptable behaviour.

Willingness

People are willing to report their errors and experiences.

Mandatory Occurrence Notification and Information

Holders of certificates from organisations (AOC, ATO, and AMO) are required to establish procedures and systems for the submission of incident details.

The SACAA encourages a responsible person within the organisation, normally the Air Service Safety Officer, being nominated to receive all information about incidents. That person's role is to establish which information meets the criteria for the submission of incident details to the Authority.

Individuals are strongly advised, in the interests of safety, to submit details to their employer, except when confidentiality is regarded as essential. However, an individual may submit details of an incident directly to the Authority (CAA).

A manufacturer, maintenance, overhaul, or repair organisation of aircraft, components, or equipment, is expected to submit information about an incident to the Authority if the aircraft operator has not done so. Operators should advise manufacturers of incidents that have been notified and detailed to the Authority.

Any person or organisation must submit details about any incident of which they have knowledge, unless they have good reason to believe that details of the incident have already been, or will be, submitted by someone else.

Definitions

Note: *It is important that persons submitting reports keep the definition of an incident firmly in mind when deciding whether to submit information. If in doubt, the information should still be submitted.*

“Accident”

includes an occurrence associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time it comes to rest at the end of the flight and the primary propulsion system is shut down, during which –

- (a) a person is fatally or seriously injured as result of –
 - (i) being in the aircraft;
 - (ii) direct contact with any part of the aircraft, including parts which have become detached or are released from the aircraft; or
 - (iii) direct exposure to jet blast, rotor or propeller wake, 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 passengers and flight crew; or
- (b) the aircraft sustains damage or structural failure which –
 - (i) adversely affects the structural strength, performance or flight characteristics of the aircraft; and

- (ii) would normally require major repair or replacement of the affected component, except for engine failure or damage when the damage is limited to a single engine, (including its cowlings or accessories), to propellers, wing tips, antennae, probes, vanes, tyres, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aircraft skin (such as small dents or puncture holes), or for minor damages to main rotor blades, tail rotor blades, landing gear, and holes resulting from hail or bird strike; or
- (c) the aircraft is still missing after an official search has been terminated and the wreckage has not been located; or
- (d) the aircraft is in a place where it is completely inaccessible.

“Serious Incident”

means an incident involving circumstances indicating that there was a high probability of an accident and associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move for the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down.

ICAO Annex 13 provides a list of examples of serious incidents. The incidents listed below are typical examples of incidents that are likely to be serious incidents. The list is not exhaustive and only serves as guidance.

- near collisions requiring an avoidance manoeuvre to avoid a collision or an unsafe situation or when an avoidance action would have been appropriate.
- controlled flight into terrain only marginally avoided.
- aborted take-off on a closed or engaged runway.
- take-off from a closed or engaged runway with marginal separation from obstacles.
- landing or attempted landings on a closed or engaged runway.
- gross failure to achieve predicted performance during take-off or climb.
- fires and smoke in the passenger compartment, in cargo compartments, or engine fires, even though the fires were extinguished by the use of extinguishing agents.
- events requiring the emergency use of oxygen by the flight crew.
- aircraft structural failures or engine disintegrations not classified as an accident.
- multiple malfunctions of one or more aircraft systems seriously affecting the operation of the aircraft.
- flight crew incapacitation in flight.
- fuel quantity requiring the declaration of an emergency by the pilot.
- take-off or landing incidents such as undershooting, overrunning, or running off the

edges of runways.

- system failures, weather phenomena, operations outside the approved envelope or other occurrences which could have caused difficulties controlling the aircraft.
- failures of more than one system, in a redundant system mandatory for flight guidance and navigation.

“Incident”

means an occurrence, other than an accident, associated with the operation of an aircraft, which affects or could affect the safety of aircraft operations, examples of which are;

- a defective condition or;
- an unsatisfactory behaviour or;
- a procedure—which did not immediately affect the safety of an aircraft operation, but which if allowed to continue uncorrected or which, if repeated in different, but likely circumstances, would affect the safety of an aircraft operation.

“Hazard” means any act, omission, event or condition or a combination thereof that could lead to or result in an accident or incident.

Note: Attachment B contains a list of hazards.

Civil Aviation Regulations

Notification of accidents, incidents and hazards

Notification of accidents

12.02.1

- (1) The PIC of an aircraft involved in an accident within the Republic, or if he or she is killed or incapacitated, a flight crew member, or if there are no surviving flight crew members or if they are incapacitated, the operator or owner, as the case may be, shall, as soon as possible but at least within 24 hours since the time of the accident, notify –
 - (a) the Director;
 - (b) an ATSU; or
 - (c) the nearest police station, of such accident.
- (2) If an ATSU or police station is notified of an accident in terms of sub-regulation (1), such ATSU or police station shall, immediately on receipt of the notification, notify –
 - (a) the Director; and
 - (b) where such accident occurs on an aerodrome, the aerodrome manager.

Notification of incidents

12.02.2

- (1) The PIC, and any other flight crew member, operator or owner, as the case may be, of an aircraft involved in an incident (including a serious incident), other than an ATS incident, within the Republic, shall, as soon as possible but at least within 24 hours since the time of such incident, notify –
 - (a) the Director; or
 - (b) an ATSU; or
 - (c) the nearest Police Station, of such incident.
- (2) If an ATSU is notified of an incident in terms of sub-regulation (1), such ATSU shall, immediately on receipt of the notification and as prescribed in Document SA-CATS 12, notify –
 - (a) the Director, and
 - (b) where such incident occurs on an aerodrome, the aerodrome manager.
- (3) The PIC, any other flight crew member, operator or owner, as the case may be, of an aircraft involved in an ATS incident within the Republic, or any ATS personnel witnessing an ATS incident, shall, as soon as possible, notify an ATSU of such ATS incident, and such ATSU shall immediately on receipt of the notification, notify the Director in the appropriate form.

Notification of accidents or incidents outside the Republic

12.02.3

The PIC of a South African registered aircraft involved in an accident or incident outside the Republic, or if he or she is killed or incapacitated, a flight crew member, or if there are no surviving flight crew members, or if they are incapacitated, the operator or owner, as the case may be, shall as soon as possible, notify –

- (a) the appropriate authority in the State or territory where the accident or incident occurred, directly or through any ATSU; and
- (b) the Director,

of such accident or incident.

Particulars of notification

12.02.4

Any notification of an accident or incident referred to in regulation [12.02.1](#), 12.02.2 or 12.02.3 other than an ATS incident, shall –

- (a) include the following particulars:
 - (i) type, model, nationality and registration marks of the aircraft;
 - (ii) name of the owner or operator, as applicable;
 - (iii) qualification of flight crew members;
 - (iv) the date and time of the accident or incident, specified in Co-ordinated Universal Time or local time;
 - (v) last point of departure and point of intended landing of the aircraft;
 - (vi) location of accident or incident with reference to an easily identifiable geographical point and, if known, with reference to latitude and longitude; number of –
 - (aa) flight crew members and passengers aboard, killed or seriously injured; and
 - (bb) other persons killed or seriously injured;
 - (vii) nature of the accident or incident and extent of damage to aircraft as far as is known;
 - (viii) terrain characteristics of the area where the accident or incident occurred;
 - (ix) details of any dangerous goods or hazardous substances known to be on board the aircraft; and
 - (x) any other relevant information; and

- (b) be submitted forthwith to the Director, and any information which is not immediately available shall be submitted in writing as soon as it becomes available.

Notification of hazards

12.02.5

- (1) Any person involved in an accident or incident, or observing any accident, incident, hazard or discrepancy that may affect aviation safety, may notify the designated body or institution referred to in regulation 12.01.2, of such accident, incident, hazard or discrepancy.
- (2) Any person who notifies the designated body or institution referred to in regulation 12.01.2 of an accident or incident, shall not be absolved from the duty to notify the Director of such accident or incident in terms of regulation 12.02.1, 12.02.2 or 12.02.3, as the case may be.

Attachment A

List of reportable incidents

Note: Although the list below covers a wide range of items, this list is not exhaustive.

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1. AIRCRAFT FLIGHT OPERATIONS
2. AIRCRAFT TECHNICAL
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4. CARGO OPERATIONS
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1. AIRCRAFT FLIGHT OPERATIONS

1.1 Operation of the aircraft

- a) Avoidance manoeuvres:
 - risk of collision with another aircraft, terrain or other object or an unsafe situation when avoidance action would have been appropriate;
 - an avoidance manoeuvre required to avoid a collision with another aircraft, terrain or other object;
 - an avoidance manoeuvre to avoid other unsafe situations;
 - Contact, or near contact requiring avoiding action, with suspended wires or cables
- b) 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 or aerodrome.
- c) Runway incursions, defined by ICAO as “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”. (ICAO Doc 4444 - PANS-ATM)
- d) Unintentional contact with the ground, including touching down before the runway threshold
- e) Aircraft unintentionally departing from any part of a paved surface (Runway / Taxiway Excursion).
- f) Collision between an aircraft and any other aircraft, vehicle or other ground object.
- g) Substantial damage which occurs between the time any person boards an aircraft with the intention of flight and such time as all persons have disembarked
- h) Loss of control (including partial or temporary) regardless of cause.

- i) Hazard or Safety related concerns close to or above V_1 resulting from or producing a hazardous or potentially hazardous situation (e.g. rejected take-off, tail strike, engine-power loss etc.).
- j) Go around producing a hazardous or potentially hazardous situation.
- k) Descent below decision height/altitude or minimum descent height/altitude without the required visual reference.
- l) Loss of position awareness relative to actual position or to other aircraft.
- m) Breakdown in communication between flight crew "CRM" (crew resource management) or between flight crew and other parties (cabin crew, ATC [air traffic control] engineering).
- n) Heavy landing - a landing deemed to require an inspection.
- o) Incorrect setting of an "SSR" (secondary surveillance radar) code or of an altimeter subscale.
- p) Incorrect programming of, or erroneous entries into, equipment used for navigation or performance calculations, or use of incorrect data.
- q) Inadvertent and/or incorrect operation of any controls.
- r) Inability to achieve the intended aircraft configuration for any flight phase (e.g. landing gear and gear doors, flaps, stabilisers, slats etc.).
- s) A hazard or potential hazard which arises as a consequence of any deliberate simulation of failure conditions for training, system checks or training purposes.
- t) Abnormal air frame vibration.
- u) Operation of any primary warning system associated with manoeuvring the aircraft e.g. configuration warning, stall warning (stick shaker), over-speed warning etc. unless:
 - i) the crew conclusively established that the indication was false and provided that the false warning did not result in difficulty or hazard arising from the crew response to the warning; or
 - ii) operated for training or test purposes.
- v) Operation of any primary warning system associated with aircraft systems or equipment. For example, fire or smoke warning, door warning
- w) "GPWS" (ground proximity warning system)/"TAWS" (terrain awareness and warning system) "warning" when:
 - i) the aircraft comes into closer proximity to the ground than had been planned or anticipated; or
 - ii) the warning is experienced in instrument meteorological conditions or at night and is established as having been triggered by a high rate of descent (mode 1); or
 - iii) the warning results from failure to select landing gear or landing flaps by the appropriate point on the approach; or
 - iv) any difficulty or hazard arises or might have arisen as a result of crew response to the "warning" e.g. possible reduced separation from other traffic. This could include warning of any mode or type i.e. genuine, nuisance or false.

- v) GPWS/TAWS "alert" when any difficulty or hazard arises or might have arisen as a result of crew response to the "alert".
 - vi) "ACAS" (air collision advisory system)"RA"s (resolution advisories).
 - vii) GPWS nuisance warning at a particular aerodrome.
- x) Jet blast incidents resulting in significant damage or serious injury.
 - y) Repetitive instances of a specific type of occurrence which in isolation would not be considered "reportable" but which due to the frequency with which they arise, form a potential hazard.
 - z) Wake-turbulence encounters. Encountering wake turbulence during approach to land, or on climb after take-off
 - aa) Any other occurrence of any type considered to have endangered or which might have endangered the aircraft or its occupants on board the aircraft or persons on the ground.
 - bb) Promulgated information incidents. Provision of significantly incorrect, inadequate, or misleading promulgated information in any:
 - i) Aeronautical information publication
 - ii) Map
 - iii) Chart
 - iv) Manual
 - v) Meteorological information.

1.2 Emergencies

- a) Fire, explosion, smoke or toxic or noxious fumes, even though fires were extinguished.
- b) The use of any non-standard procedure by the flight or cabin crew to deal with an emergency when:
 - i) the procedure exists but is not used;
 - ii) the procedure does not exist;
 - iii) the procedure exists but is incomplete or inappropriate;
 - iv) the procedure is incorrect;
 - v) the incorrect procedure is used.
- c) Inadequacy of any procedures designed to be used in an emergency, including when being used for maintenance, training or test purposes.
- d) An event leading to an emergency evacuation.
- e) Depressurisation / Decompression.
- f) The use of any emergency equipment or prescribed emergency procedures in order to deal with a situation.
- g) An event leading to the declaration of an emergency ("Mayday" or "PAN").
- h) Failure of any emergency system or equipment, including all exit doors and lighting, to perform satisfactorily, including when being used for maintenance, training or test purposes.

- i) Events requiring any use of emergency oxygen by any crew member.
- j) An emergency, forced, or precautionary, landing.

1.3 Crew incapacitation

- a) Incapacitation of any member of the flight crew, including that which occurs prior to departure if it is considered that it could have resulted in incapacitation after take-off.
- b) Incapacitation of any member of the cabin crew which renders them unable to perform essential emergency duties.

1.4 Injury

- a) Hazard or Safety related concerns which have or could have led to significant injury to passengers or crew but which are not considered reportable as an accident

1.5 Meteorology

- a) A lightning strike which resulted in damage to the aircraft or loss or malfunction of any essential service.
- b) A hail strike which resulted in damage to the aircraft or loss or malfunction of any essential service.
- c) Severe turbulence encounter, an encounter resulting in injury to occupants or deemed to require a "turbulence check" of the aircraft.
- d) A windshear encounter.
- e) Icing encounter resulting in handling difficulties, damage to the aircraft or loss or malfunction of any essential service.

1.6 Environmental

- a) A bird strike which resulted in damage or possible damage to the aircraft or loss or malfunction of any essential service.
- b) A collision between an aircraft and one or more birds.
- c) One or more birds pass the aircraft inside the wing span.
- d) One or more birds pass sufficiently close to an aircraft in flight to cause alarm to the pilot.
- e) A wildlife strike which resulted in damage or possible damage to the aircraft or loss or malfunction of any essential service

1.7 Security

- a) Unlawful interference with the aircraft including a bomb threat or hijack.
- b) Difficulty in controlling intoxicated, violent or unruly passengers.
- c) Discovery of a stowaway
- d) Unlawful or attempted unlawful seizure of an aircraft
- e) Violence against a person on board an aircraft in flight if that act is likely to, or has the potential to, endanger the safety of that aircraft
- f) Destroying an aircraft in service, or causing damage to such an aircraft, that renders it incapable of flight, or which is likely to endanger its safety in flight
- g) Placing, or causing to be placed, or attempting to place, on an aircraft in service, by any means whatsoever, a device or substance which is likely—
 - i) to destroy that aircraft; or
 - ii) to cause damage to it that renders it incapable of flight; or
 - iii) to cause damage to it that is likely to endanger its safety in flight:
- h) Destroying, or damaging, an aeronautical telecommunication facility, or interfering with its operation
- i) Unlawfully using any device, substance, or weapon, at an aerodrome to—
 - i) use violence against a person which causes, or is likely to cause serious injury or death; or
 - ii) destroy, or seriously damage, an aerodrome facility, or an aircraft on the aerodrome
- j) Attempted break-in to a parked aircraft
- k) Any other unlawful act which affects or could affect the immediate safety of aircraft operations
 - i) Unlawful attempt to take on board an aircraft:
 - ii) any firearm; or
 - iii) any ammunition; or
 - iv) any explosive substance or device, or any other injurious substance or device of any kind whatsoever, which could be used to endanger the safety of the aircraft or of persons on board the aircraft; or
 - v) any other dangerous or offensive weapon, or any dangerous instrument of any kind whatsoever.

1.8 Air Navigation

- a) Near collision incidents (encompassing specific situations where one aircraft and another aircraft/the ground/a vehicle/person or object are perceived to be too close to each other):
 - i) separation minima infringement;
 - ii) inadequate separation;
 - iii) "near-CFIT" (near-controlled flight into terrain);
 - iv) runway incursion where avoiding action was necessary.

- b) Potential for collision or near collision (encompassing specific situations having the potential to be an accident or a near collision, if another aircraft is in the vicinity):
 - i) runway incursion where no avoiding action is necessary;
 - ii) runway excursion;
 - iii) aircraft deviation from ATC clearance;
 - iv) aircraft deviation from applicable "ATM" (air traffic management) regulation:
 - aircraft deviation from applicable published ATM procedures;
 - unauthorised penetration of airspace;
 - deviation from aircraft ATM-related equipment carriage and operations, as mandated by applicable regulation(s).
- c) ATM-specific Hazard or Safety related concerns (encompassing those situations where the ability to provide safe ATM services is affected, including situations where, by chance, the safe operation of aircraft has not been jeopardised). This shall include the following Hazard or Safety related concerns:
 - i) inability to provide ATM services:
 - inability to provide air traffic services;
 - inability to provide airspace management services;
 - inability to provide air traffic flow management services;
 - ii) failure of Communication function;
 - iii) failure of Surveillance function;
 - iv) failure of Data Processing and Distribution function;
 - v) failure of Navigation function;
 - vi) ATM system security.
- d) "ATC" (air traffic control) Navigation and Communications – significant malfunction or deterioration of service.
- e) An aircraft was or could have been endangered by impairment of any member of ground staff (e.g. ATC, "AD" (aircraft dispatchers), Maintenance, etc.).
- f) ATC overload.
- g) Failure or unplanned shutdown of a major operational ATC computer system, requiring reversion to manual back-up and resulting in disruption to the normal flow of air traffic.
- h) Failure or inadequacy of prescribed let-down procedures
- i) Misidentification of aircraft by a radar operator
- j) Incorrect transmission, receipt or interpretation of significant messages
- k) Less separation between aircraft than that prescribed for the situation
- l) Unauthorised infringement of any form of designated airspace
- m) Flight at a level, or on a route, different from that allocated
- n) Flight outside the applicable position and altitude tolerances for operation in RNP and RVSM airspace
- o) Total failure, significant malfunction, or out-of-tolerance operation of any aeronautical telecommunication or navigational aid facility.

- p) Incorrect receipt or interpretation of radio-telephony messages

1.9 Aerodrome and aerodrome facilities

- a) Significant spillage during fuelling operations.
- b) Loading of incorrect fuel quantities likely to have a significant effect on aircraft endurance, performance, balance or structural strength.
- c) Loading of contaminated, or incorrect type of, fuel or other essential fluids
- d) Failure or significant deterioration of aerodrome aircraft operating surfaces.
- e) Failure or significant malfunction of aerodrome lighting.
- f) Failure or significant malfunction of a visual approach slope indicator system.
- g) Significant deterioration of aerodrome wind indicators, markings, or signs.
- h) Errors, or inadequacies, in marking of obstructions or hazards on aerodrome manoeuvring areas.
- i) Errors, or inadequacies, in lighting of obstructions or hazards on aerodrome manoeuvring areas or in the vicinity of an aerodrome.
- j) Any other obstruction of the aerodrome operational area or protrusion into the aerodrome obstacle limitation surfaces by aircraft, vehicles, persons, animals or foreign objects in a hazardous or potentially hazardous situation.
- k) Apron blast incidents resulting in significant damage or injury.

2. AIRCRAFT TECHNICAL (By flight crew)

2.1 Systems

The following general criteria applicable to all systems are proposed:

- a) loss, significant malfunction or defect of any system, subsystem or set of equipment when standard operating procedures, drills etc. could not be satisfactorily accomplished
- b) inability of the crew to control the system, for example:
 - i) uncommanded actions,
 - ii) incorrect and/or incomplete response, including limitation of movement or stiffness,
 - iii) runaway,
 - iv) mechanical disconnection or failure;
- c) failure or malfunction of the exclusive function(s) of the system (one system could integrate several functions)

- d) interference within or between systems
- e) failure or malfunction of the protection device or emergency system associated with the system
- f) loss of redundancy of the system
- g) any occurrence resulting from unforeseen behaviour of a system
- h) for aircraft types with single main systems, subsystems or sets of equipment: loss, significant malfunction or defect in any main system, subsystem or set of equipment.
- i) for aircraft types with multiple independent main systems, subsystems or sets of equipment: the loss, significant malfunction or defect of more than one main system, subsystem or set of equipment.
- j) operation of any primary warning system associated with aircraft systems or equipment unless the crew conclusively established that the indication was false, provided that the false warning did not result in difficulty or hazard arising from the crew response to the warning
- k) leakage of hydraulic fluids, fuel, oil or other fluids which resulted in a fire hazard or possible hazardous contamination of aircraft structure, systems or equipment, or risk to occupants
- l) malfunction or defect of any indication system when this results in the possibility of misleading indications to the crew
- m) any failure, malfunction or defect if it occurs at a critical phase of the flight and is relevant to the system operation
- n) significant shortfall of the actual performances compared to the approved performance which resulted in a hazardous situation (taking into account the accuracy of the performance-calculation method) including braking action, fuel consumption etc.
- o) asymmetry of flight controls; e.g. flaps, slats, spoilers etc.

Examples of reportable Hazard or Safety related concerns

The following subparagraphs give examples of reportable Hazard or Safety related concerns resulting from the application of the general criteria to specific systems.

1. Air conditioning/ventilation

- a) complete loss of avionics cooling;
- b) depressurisation.

2. Autoflight system

- a) failure of the autoflight system to achieve the intended operation while engaged;
- b) significant reported crew difficulty to control the aircraft linked to autoflight system functioning;
- c) failure of any autoflight system disconnect device;
- d) uncommanded autoflight mode change.

3. Communications

- a) failure or defect of passenger address system resulting in loss of or inaudible passenger address;
- b) total loss of communication in flight.

4. Electrical system

- a) loss of one electrical distribution system (AC/DC);
- b) total loss or loss of more than one electrical generation system;
- c) failure of the backup (emergency) electrical generation system.

5. Cockpit/Cabin/Cargo

- a) pilot seat control loss during flight;
- b) failure of any emergency system or equipment, including emergency evacuation signaling system, all 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 or delayed response in the operation of primary flight control systems or their associated tab and lock systems;
- c) flight control surface runaway;
- d) flight control surface vibration felt by the crew;
- 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 wrong indication of fuel quantity on board;
- b) leakage of fuel which resulted in major loss, fire hazard, significant contamination;
- c) malfunction or defects of the fuel jettisoning system which resulted in inadvertent loss of significant quantity, fire hazard, hazardous contamination of aircraft equipment or inability to jettison fuel;
- d) fuel system malfunctions or defects which had a significant effect on fuel supply and/or distribution;
- e) inability to transfer or use total quantity of usable fuel.
- f) Critically low fuel quantity or inability to transfer fuel or use total quantity of usable fuel.
- g) Fuel system malfunctions or defects, which had an effect on fuel supply and/or distribution.
- h) Exceedence of fuel imbalance limits.

- i) Leakage of fuel that results in a major loss, significant fire hazard, or significant contamination
- j) Malfunction of the fuel jettisoning system that results in inadvertent loss of a significant quantity of fuel, significant fire hazard, possibly hazardous contamination of aircraft equipment, or inability to jettison

9. Hydraulics

- a) loss of one hydraulic system (ETOPS only);
- b) failure of the isolation system;
- c) loss of more than one hydraulic circuit;
- d) failure of the back-up hydraulic system;
- e) inadvertent ram air turbine extension.
- f) Leakage of hydraulic fluids, oil, or other fluid, which results in a significant fire hazard, or possibly, hazardous contamination.

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 when the possibility of significant misleading indications to the crew could result in an inappropriate crew action on an essential system;
- b) loss of a red warning function on a system;
- c) for glass cockpits: loss or malfunction of more than one display unit or computer involved in the display/warning function.

12. Landing gear system/brakes/tyres

- a) brake fire;
- b) significant loss of braking action;
- c) asymmetrical braking action leading to significant path deviation;
- d) failure of the landing gear free fall extension system (including during scheduled tests);
- e) unwanted landing gear or gear doors extension/retraction
- f) multiple tyre burst.

13. Navigation systems (including precision approach systems) and air data systems

- a) total loss or multiple navigation equipment failures
- b) total or multiple air data system equipment failures
- c) significant misleading indications
- d) significant navigation errors attributed to incorrect data or a database coding error
- e) unexpected deviations in lateral or vertical path not caused by pilot input

- f) problems with ground navigational facilities leading to significant navigation errors not associated with transitions from inertial navigation mode to radio navigation mode.

14. Oxygen for pressurised aircraft

- a) loss of oxygen supply in the cockpit
- b) loss of oxygen supply to a significant number of passengers (more than 10 %), including when found during maintenance or training or testing.

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.

16. Power Plant

- a) Flameout, shutdown or malfunction of any engine.
- b) Failure or malfunction of any part of an engine or powerplant resulting in any one or more of the following:
 - i) non-containment of components/debris;
 - ii) uncontrolled internal or external fire, or hot gas breakout;
 - iii) thrust in a direction different from that demanded by the pilot;
 - iv) thrust-reversing system failing to operate or operating inadvertently;
 - v) inability to control power, thrust or revolutions per minute;
 - vi) failure of the engine mount structure;
 - vii) partial or complete loss of a major part of the powerplant;
 - viii) dense visible fumes or concentrations of toxic products sufficient to incapacitate crew or passengers;
 - ix) inability, by use of normal procedures, to shutdown an engine;
 - x) inability to restart a serviceable engine.
- c) An uncommanded thrust/power loss, change or oscillation which is classified as a "LOTC" (loss of thrust or power control):
 - i) for a single-engine aircraft;
 - ii) or where it is considered excessive for the application; or
 - iii) where this could affect more than one engine in a multi-engine aircraft, particularly in the case of a twin-engine aircraft; or
 - iv) for a multi-engine aircraft where the same, or similar, engine type is used in an application where the event would be considered hazardous or critical.
- d) Defects of common origin which could cause an in-flight shut-down rate so high that there the possibility of more than one engine being shut down on the same flight.
- e) Exceedance of engine parameters.
- f) "FOD" (foreign objects damage).
- g) Inability to achieve predicted performance during take-off or initial climb.
- h) Abnormal air frame vibration.
- i) Failure or malfunction of engines. Loss, shutdown, or significant malfunction, of any engine when.
 - i) standard operating procedures, drills, and such like, are not satisfactorily accomplished; or

- ii) a hazardous situation arises, or might have arisen, from the decisions or actions of the crew subsequent to the malfunction or failure.

17. APU's

- a) Shut down or failure when the APU is required to be available by operational requirements, e.g. ETOPS, "MEL" (minimum equipment list).
- b) Inability to shut down the APU.
- c) Overspeed.
- d) Inability to start the APU when needed for operational reasons.

18. Other Hazard or Safety related concerns

- a) Any incident where any feature or inadequacy of the aircraft design could have led to an error of use that could contribute to a hazardous or catastrophic effect.
- b) Any other event which could endanger the aircraft, or affect the safety of the occupants of the aircraft, or people or property in the vicinity of the aircraft or on the ground.

2.2 Aircraft technical

2.2.1 Structural

Not all structural failures need to be reported. Engineering judgment is required to decide whether a failure is serious enough to be reported. The following examples can be taken into consideration:

- a) damage to a Principal Structural Element (PSE) that has not been designated as damage-tolerant (life-limited element). PSEs are those which contribute significantly to carrying flight, ground, and pressurisation loads, and the failure of which could result in a catastrophic failure of the aircraft;
- b) defect or damage exceeding admissible damages to a PSE that has been designated as damage-tolerant;
- c) damage to or defect exceeding allowed tolerances of a structural element, the failure of which could reduce the structural stiffness to such an extent that the required flutter, divergence or control reversal margins are no longer achieved;
- d) 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;
- e) damage to or defect of a structural element, which could jeopardise proper operation of systems.
- f) loss of any part of the aircraft structure in flight.

2.2.2 Aircraft maintenance and repair

- a) Defects of common origin which could cause an in-flight shut-down rate so high that there is the possibility of more than one engine being shut down on the same flight.
- b) An engine limiter or control device failing to operate when required or operating inadvertently.
- c) Exceedance of engine parameters.
- d) Incorrect assembly of parts or components of the aircraft found during an inspection or test procedure not intended for that specific purpose.
- e) Hot bleed air leak resulting in structural damage.
- f) Any defect in a life-controlled part causing retirement before completion of its full life.
- g) Any damage or deterioration (e.g. fractures, cracks, corrosion, delamination, disbonding etc.) resulting from any cause (e.g. as flutter, loss of stiffness or structural failure) to:
 - i) a primary structure or a Principal Structure Element (PSE) (as defined in the manufacturers' Repair Manual) where such damage or deterioration exceeds allowable limits specified in the Repair Manual and requires a repair or complete or partial replacement;
 - ii) a secondary structure which consequently has or may have endangered the aircraft;
 - iii) the engine, propeller or rotorcraft rotor system.
- h) Any failure, malfunction or defect of any system or equipment, or damage or deterioration thereof found as a result of compliance with an airworthiness directive or other mandatory instruction issued by a regulatory authority, when:
 - i) it is detected for the first time by the reporting organisation implementing compliance;
 - ii) on any subsequent compliance, it exceeds the permissible limits quoted in the instruction and/or published repair/rectification procedures are not available.
- i) Failure of any emergency system or equipment, including all exit doors and lighting, to perform satisfactorily, including when being used for maintenance or test purposes.
- j) Non-compliance or significant errors in compliance with required maintenance procedures.

Products, parts, appliances and materials of unknown or suspect origin.
- k) Misleading, incorrect or insufficient maintenance data or procedures that could lead to maintenance errors.
- l) Any failure, malfunction or defect of ground equipment used for testing or checking of aircraft systems and equipment when the required routine inspection and test procedures did not clearly identify the problem, where this results in a hazardous situation.

2.2.3 Propellers and transmission

- a) Failure or malfunction of any part of a propeller or powerplant resulting in any one or more of the following:
 - i) an overspeed of the propeller;
 - ii) the development of excessive drag;
 - iii) a thrust in the opposite direction to that commanded by the pilot;
 - iv) a release of the propeller or any major portion of the propeller;
 - v) a failure that results in excessive imbalance;
 - vi) the unintended movement of the propeller blades below the established minimum in-flight low-pitch position;
 - vii) an inability to feather the propeller;
 - viii) an inability to change propeller pitch;
 - ix) an uncommanded change in pitch;
 - x) an uncontrollable torque or speed fluctuation;
 - xi) the release of low-energy parts.

2.2.4 Rotors and transmission

- a) Damage or defect of main rotor gearbox/attachment which could lead to in-flight separation of the rotor assembly and/or malfunctions of the rotor control.
- b) Damage to tail rotor, transmission and equivalent systems.

3. CABIN OPERATIONS

3.1 SECURITY

- a) When an act of aggressions occurs in the aircraft cabin
- b) When security procedures are breached

3.2 PASSENGER BEHAVIOUR

- a) When a passenger is caught smoking in the passenger cabin or lavatories
- b) When a passenger becomes disruptive
- c) When a death occurs to a crew member or passenger
- d) When passengers/crew are injured or ill
- e) When there is a birth on board the aircraft;
- f) When an intoxicated passenger is identified
- g) When excessive hand baggage is allowed into the passenger cabin

3.3 CREW ACTIONS

- a) When crew is injured or ill
- b) Where there is a problem re the enforcement of the CABs
- c) Any violations of the Standard Operating Procedures as prescribed in the CCMM, relating to cabin safety
- d) Any event where safety standards may have been compromised (service providers should be reported)
- e) When there is a safety related interruption of the sterile cockpit
- f) Any event that may provide useful information for the enhancement of cabin safety

3.4 EMERGENCIES

- a) Incapacitation of any member of the cabin crew which renders them unable to perform essential emergency duties
- b) When the cabin is prepared for an emergency landing

- c) When there is a decompression of the aircraft
- d) When emergency equipment is non-operational or not present
- e) When an emergency landing performed
- f) When the aircraft is evacuated
- g) When fire/smoke/fumes are present in the cabin
- h) When a lavatory smoke detector is activated or vandalized
- i) When a hazardous material or substance is found in the passenger cabin
- j) An event leading to an emergency evacuation
- k) When significant turbulence is encountered

3.5 TECHNICAL SNAGS

- a) When a communication system fails (e.g. PA or call bells)
- b) When there is a potential hazard which may cause injury to passengers or crew in the cabin or galleys of the aircraft
- c) When a jumpseat or any part thereof is broken or inoperable
- d) Presence of rodents (mice / rats) in the cabin
- e) An occurrence not normally considered as reportable (e.g., furnishing and cabin equipment, water systems), where the circumstances resulted in endangering the aircraft or its occupants

4. CARGO OPERATIONS

4.1 Dangerous Goods

- a) Undeclared/incorrectly declared dangerous goods
- b) Dangerous Goods spillage
- c) Stowage of incompatible dangerous goods
- d) Damaged/leaking dangerous goods
- e) Cargo Aircraft Only dangerous goods loaded on Passenger Aircraft
- f) Carriage or attempted carriage of dangerous goods in contravention of applicable regulations, including incorrect labeling and packaging of dangerous goods.
- g) Escape of smoke, or flames, from the container or package in which dangerous goods are contained.
- h) Breakage of the container, or package, in which the dangerous goods are contained

4.2 Handling of cargo

- a) Significant contamination of aircraft structure, systems and equipment arising from the carriage of baggage or cargo, including leaking/smelly Human Remains.
- b) Incorrect loading of passengers, baggage or cargo, likely to have a significant effect on aircraft mass and/or balance.
- c) Incomplete flight files
- d) Incorrect stowage of baggage or cargo (including hand baggage) likely in any way to endanger the aircraft, its equipment or occupants or to impede emergency evacuation.
- e) Inadequate stowage of cargo containers or other substantial items of cargo.
- f) Incorrect information provided on NOTOC
- g) Inadequate packaging of live animals
- h) Intentional abuse of company property / equipment / vehicles
- i) Operating without safety equipment and / or unsafe equipment
- j) Operating with incorrect equipment
- k) Distracting, abusing, etc.
- l) Poor communication

- m) Poor judgment
- n) Non-compliance with rules, regulations, SOP's, etc.
- o) Lack of approved rules, regulations, SOP's, etc.
- p) Deficiencies in rules, regulations, SOP's, etc.
- q) Unsafe equipment
- r) Unserviceable equipment that is vital to the safe execution of operations (Recurrent failures)
- s) Poor communication
- t) Management / Supervisory / Peer pressures
- u) Inadequate control
- v) Inadequate working conditions
- w) Lack of training
- x) Inadequate situational awareness

4.3 Aircraft ground handling and servicing

- a) Non-compliance or significant errors in compliance with required servicing procedures.
- b) Loading of contaminated or incorrect type of fuel or other essential fluids (including oxygen and potable water).
- c) Unsatisfactory ground de-icing/anti-icing.
- d) Repetitive events, at an excessive frequency, of a specific type of failure, or malfunction, which in isolation would not be considered to be a reportable incident.

4.4 Cargo Documentation

- a) Incorrect flight files
- b) Incorrect weights captured in system
- c) Incorrect information provided on NOTOC
- d) Unmanifested cargo loaded (cargo not declared in system)

4.5 Cargo Pallet

- a) Incorrect pallet used for aircraft type
- b) Weight restriction per container/pallet exceeded
- c) Unserviceable container/ pallet used

5. PASSENGER HANDLING

- a) Dangerous Goods spillage
- b) Undeclared hidden dangerous goods
- c) Soliciting
- d) Incorrectly identifying passengers at check in counters
- e) Failure to verify travel documentation
- f) Acceptance of excessive hand baggage / cargo pieces at check in counter.
- g) Incorrect identification of gender on system
- h) Distracting, abusing, etc.
- i) Poor communication
- j) Poor judgment
- k) Non-compliance with rules, regulations, SOP's, etc.
- l) Lack of approved rules, regulations, SOP's, etc.
- m) Deficiencies in rules, regulations, SOP's, etc.
- n) Poor communication
- o) Management / Supervisory / Peer pressures
- p) Inadequate control
- q) Inadequate working conditions
- r) Lack of training

- s) Inadequate situational awareness

6. RAMP HANDLING

- a) Spillage on Airside
- b) "Cargo Aircraft Only" dangerous goods loaded on Passenger Aircraft
- c) The operation of unserviceable vehicle / equipment
- d) Found on boards
- e) Incorrect baggage weights captured in system
- f) Failure to capture rush baggage and weight
- g) Incorrect information provided on NOTOC
- h) Unserviceable container / pallet used
- i) Inadequate packaging of live animals
- j) Intentional abuse of company property / equipment / vehicles
- k) Operating without safety equipment and / or unsafe equipment
- l) Operating with incorrect equipment
- m) Distracting, abusing, etc.
- n) Poor communication
- o) Poor judgment
- p) Non-compliance with rules, regulations, SOP's, etc.
- q) Lack of approved rules, regulations, SOP's, etc.
- r) Deficiencies in rules, regulations, SOP's, etc.
- s) Unsafe equipment
- t) Unserviceable equipment that is vital to the safe execution of operations (Recurrent failures)
- u) Poor communication
- v) Management / Supervisory / Peer pressures
- w) Inadequate control
- x) Inadequate working conditions
- y) Lack of training
- z) Inadequate situational awareness

ATTACHMENT B

AVIATION SAFETY HAZARDS (Threats):

REPORTABLE HAZARDS

1. AIRCREW HAZARDS:

1.1 Advanced age

Reduced proficiency, awareness & risk of medical event associated incidents or accident

1.2 Certification Expiry

- CRM Certificate
- Dangerous Goods Certificate
- Flying License
- HA/SMS Certificate
- Medical Certificate
- SEPT Certificate

1.3 Human Factors (Cognitive Inhibition)

- Communication Error
 - a) Clearance,
 - Not recorded
 - Read back as a question
 - Set expected (not actual)
 - b) Conditional Clearance, failure to read back condition.
 - c) Departure delay (>90sec.) failure to advise ATC
 - d) Frequency,
 - Change, failure to wait & listen
 - Failure to monitor
 - e) Phraseology, Unclear or ambiguous
 - f) RTF,
 - Poor RTF not challenged
 - Prolonged break, failure to check
 - Unnecessary
 - g) Distractions:
 - Chatting (Non-sterile cockpit below MORA)
 - Daydreaming by choice /default.
 - Emergencies
 - Equipment malfunction/unserviceable
 - Passengers
 - System anomalies
 - Time constraints/pressurized/being rushed
 - h) Emotions
 - Anger
 - Guilt
 - Low self esteem
 - Worry
 - i) Fatigue (Lack of sleep, Disturbed sleep Cycle)
 - j) Illness reduced proficiency/ awareness

k) Primary Backup Inversion.(Overdependence on monitoring pilot's prompts)

- 1.4 Equipment deficiency
 - GPS Portable backup
 - Headset
 - Letdown charts (Jepp/Airad)
 - Spectacles spare
 - Torch and spare batteries
- 1.5 False position reporting
- 1.6 Flight Frequency <50hrs>200hrs per year
- 1.7 Hazard Awareness ignorance/indifference
- 1.8 Immature attitude
- 1.9 Medication reduced proficiency/ awareness
- 1.10 Passenger briefing (none / inadequate)
- 1.11 Personal limitations ignorant/ indifferent
- 1.12 Proficiency/skill deficient
- 1.13 Reflective jackets not worn
- 1.14 Unsure and failure to advise ATC of:
 - Instruction
 - Position
- 1.15 Other

2. AIRCRAFT HAZARDS:

- 2.1 Chocks none
- 2.2 Communications capability compromised
- 2.3 Covers missing
- 2.4 Documentation deficiency
 - Cert. of Insurance
 - Cert. of Airworthiness
 - Cert. of Registration
 - Cert, Release to Service
 - Pilot Operating Handbook
- 2.5 Engine instruments unserviceable
- 2.6 Fire extinguisher
 - Low pressure
 - Date expired
- 2.7 First aid kit
 - Date expired
 - Unsealed
- 2.8 GPWS u/s
- 2.9 Icing (de- anti-) unserviceable
- 2.10 Leaks Oil / Fuel
- 2.11 Low Rotor RPM warning system unserviceable
- 2.12 MEL noncompliance
- 2.13 Navigation capability compromised
- 2.14 Placards Missing]
- 2.15 Radar unserviceable

- 2.16 Seat rail locking failure
- 2.17 Static wicks inadequate
- 2.18 Spinning rotors
- 2.19 TAWS (unserviceable, unequipped)
- 2.20 TCAS (unserviceable, unequipped)
- 2.21 Tie-downs none
- 2.22 Transponder unserviceable
- 2.23 Tyre pressure low
- 2.24 Wake Vortex
- 2.25 Window cracks
- 2.26 Windows dirty or scratched
- 2.27 Other

3. AIRPORT HAZARDS

- 3.1 Animals
- 3.2 Birds
- 3.3 Blast (Jet/Propeller/rotor)
- 3.4 Drivers (Tow tractors/vehicles)
 - Hazard lights not illuminated
 - Incorrect side of roads/taxiways
 - Too close
 - Too fast
 - Un-certified/inducted
- 3.5 Fence Peripheral (None/damaged)
- 3.6 Fire tender (Not available)
- 3.7 High Obstruction clearing gradient
- 3.8 Obstructions,
- 3.9 Rwy length (Short)
- 3.10 Rwy markings (None/ inappropriate /vague)
- 3.11 Rwy orientation inappropriate for:
 - Prevailing wind
 - Terrain
- 3.12 Rwy shoulders high/soft
- 3.13 Rwy width (Narrow)
- 3.14 Signage missing
- 3.15 Security (lack of)
- 3.16 Surface soft,
- 3.17 Vegetation (> 15cm high, within 43m of Rwy centre line)
- 3.18 Windsock (None/damaged)
- 3.19 Other

4. ATC HAZARDS:

- 4.1 Air Traffic Controller Autocratic /intimidating
- 4.2 Advanced age
- 4.3 Clearances
 - Incomplete
 - Inappropriate
 - Misunderstood
 - accent
 - inaudible

- too fast
- More than 2 per transmission

4.4 **Distraction**

- Chatting
- Daydreaming by choice /default.
- Emergencies
- Equipment malfunction/unserviceable
- Time constraints/pressurized/being rushed

4.5 **Emotions**

- Anger
- Guilt
- Low self esteem
- Worry
 - a. Fatigue (Lack of sleep, Disturbed sleep Cycle)
 - b. Frequency congestion
 - c. Hazard Awareness ignorance/indifference
 - d. Illness *reduced proficiency/ awareness*
 - e. Immature attitude
 - f. Lights, exterior, failure to display:
 - i. Landing, on receiving departure/landing clearance
 - ii. Navigation, prior to taxi
 - iii. Rotating beacon, before starting
 - iv. Strobe, on entering runway.
 - v. Taxi, as a/c starts to taxi.
 - g. Medication *reduced proficiency/ awareness*
 - h. Personal limitations ignorant/ indifferent
 - i. Proficiency/skill deficient
 - j. Other

5. **FLIGHT HAZARDS:**

5.1 **Arrival**

- Microburst
- Mountainous surroundings
- Non-stabilized approach
- Runway
 - FOD
 - Incursion
 - Narrow
 - Short
 - Slippery (wet, ice, snow, hail stones)
- Strong wind
 - Headwind
 - Tailwind
 - Crosswind
- Stopping ability reduced
 - Reduced braking
 - Reduced reverse thrust

- Turbulence
 - Wind
 - Wake vortex
- Visibility reduced (horizon/ground obscured):
 - Dust
 - Fog Mist
 - Pitch darkness (no horizon Reference)
 - Rain
 - Smoke
- Other

5.2 Departure

- Accelerate Go Non Compliance
- Accelerate Stop Non Compliance
- Climb performance (reduced, poor single engine)
- Microburst
- Mountainous surroundings
- Runway
 - FOD
 - Incursion
 - Narrow
 - Short
 - Slippery (wet, ice, snow, hail stones)
- Strong wind
 - Headwind
 - Tailwind
 - Crosswind
- Turbulence
 - Wind
 - Wake vortex
- Visibility reduced (horizon/ground obscured):
 - Dust
 - Fog Mist
 - Pitch darkness Rain
 - Smoke
 - Other

5.3 Enroute

- Airspace
 - Congested
 - Uncontrolled
- Single engine ceiling < MORA /MSA
- Other

6. HANGAR & WORKSHOP HAZARDS

- a. Disruption of maintenance (Critical component)
- b. Expiry date in American (FAA) format (mmddyyy)
- c. No maintenance due inspection
- d. Obstructions
- e. Reckless use of tools
 - Incorrect use
 - Lack of tool control
- f. Spillages (Flammable)
- g. Signage (Lack of)
- h. Time allocations (unrealistic)
 - Towing
 - Fast
 - Faulty equipment
 - Without someone in pilot seat
- i. Walkway obstructed
- j. Other

7. METEOROLOGICAL HAZARDS:

- a. Ash (volcanic, fires)
- b. Cumulo- Nimbus Activity (*Lightning/ turbulence/ icing Hail*)
- c. Icing
- d. Turbulence,
- e. Visibility reduced
- f. Wind shear
- g. Wind Strong
- h. Other

8. OPERATION POLICY/ REQUIREMENT HAZARDS:

- a. Autocratic /intimidating Manager
- b. Dispatch staff induction deficient
- c. Ill-advised Ops/Policy requirements /expectations
- d. Refueling with no pilot/engineer present
- e. Time Schedules Unrealistic
- f. Other

9. ORGANIZATIONAL HAZARDS:

- a. Human Resource Management (Lack of)
- b. Maximizing Profit Factors
- c. No Risk assessment of Management Decisions
- d. Not Identifying latent defects, risks and hazards within the operation
- e. Not monitoring work output against set standards
- f. Poor Planning, Leading, Organizing, Staffing and Directing
- g. Realistic Audit on Output Factor (Lack of)
- h. Rules & Regulations unwritten/ not enforced

- i. Safety Culture (not demonstrated/pathological/autocratic)
- j. SOP's (Lack of)
- k. Supervision (Lack of)
- l. Time Schedules unrealistic
- m. Training Deficiency
- n. Other

10. PARKING RAMP HAZARDS:

- a. Aircraft not Chocked
- b. Foreign Object Debris
- c. Helicopter Rotor not secured
- d. Maintenance without a FOD bucket
- e. No maintenance dual inspection
- f. Part of aircraft extending onto taxiway
- g. Propellers not secured
- h. Reckless use of tools
- i. Signage (missing, inadequate)
- j. Spillages (Flammable)
- k. Starting tail into wind
- l. Tail into strong wind, prevailing wind, storms
- m. Taxiing fast,
- n. Towing:
 - Fast
 - Faulty equipment
 - Without someone in pilot seat
- o. Other

11. PASSENGER HAZARDS:

- a. Dangerous goods on person or in luggage
- b. Fire extinguisher in passenger compartment
- c. No sic sacks available
- d. Unsafe mental state, attitude, ideology
- e. Other

12. Hazards example for DOA (CARs Part 147) and AMORG (CARs Part 148)

12.1 Organizational Domain Generic Hazards

- poor definition of authority and responsibilities
- Intellectual property compromise
- Product liability
- Undetected change
- Regulatory violation
- Key personnel are unaware of an issue;

12.2 Process Domain Generic Hazards

- Changes to methods or procedures
- Incomplete process definitions
- Changes to supply chain
- An unplanned work stoppage
- Removing or reducing inspections in the Quality Assurance area;
- Moving a production line, in whole or in part, to another location or supplier;
- Out-of-position work being performed by others not as qualified or knowledgeable (for example, as a result of vacations or attrition of the skilled workers);
- Breakdown in safety information flowing from one person or organization to another;
- An initiative, change, new process, or other activity intended to improve something produces, in addition to the improvement, an undesirable outcome.
- Manufacturing hazards to personnel (i.e., OSHA type hazards)

12.3 Product Domain Generic Hazards

- Incorrect product requirements
- Product manufacturing defects
- Unanticipated failure modes
- Undetected change in a system or process;
- A product that deviates from its design;
- Too many engineering changes;
- Personnel with insufficient aircraft-specific knowledge to appropriately assess compliance;
- Products not used or maintained as designed

Disclaimer

This document is based on various sources. It is to be used as a guide only when reporting safety management related occurrences.