CIVIL AVIATION DIRECTORATE
Airworthiness Inspectorate
Malta Transport Centre, Pantar Road, Lija, LJA 2021, Malta, Tel: +356 25555000, Fax: +356 25555634, civil.aviation@transport.gov.mt, www.transport.gov.mt

Transport Malta

Information and Advisory Notice No. 01

Issue No: 6 Dated: 12 December 2024

Occurrence Reporting

Object

One of the main elements of safety culture in organisations is the willingness by personnel to communicate safety issues and their awareness of the risks and hazards faced by the organisation and its operation.

The object of this IAN revision is to provide further updated guidance and information on occurrence reporting in the continued airworthiness domain, having in mind the latest regulations and principles of safety management.

Regulation

According to Regulation (EU) 965/2012, (EU) No 1321/2014 Annex I (Part M), Annex II (Part-145), Annex Vb (Part-ML) and Annex Vc (Part-CAMO), owners of aircraft, operators of aircraft and maintenance organisations are required to report to the Competent Authorities, any identified condition of an aircraft or component which endanger or which, if not corrected or addressed, would endanger an aircraft, its occupants, any other person, equipment or installation affecting aircraft operations.

Regulation (EU) No 376/2014 **on the reporting, analysis and follow-up of occurrences in civil aviation,** and Regulation (EU) No 2015/1018 laying down a list classifying occurrences in civil aviation**.** (EU) No 376/2014 amends (EU) No 996/2010 **on the investigation and prevention of accidents and incidents in civil aviation.**

Regulation (EU) 376/2014 establishes a framework, across aviation domains and at each level (industry, national and European), to ensure the collection of as complete as possible safety occurrence data and its analysis with a view to support the full spectrum of safety management activities, including the adoption and implementation of mitigation actions where relevant.

Part-145.A.202 introduces the internal safety reporting scheme with the following objectives;

(1) enable an assessment to be made of the safety implications of each relevant incident (errors, near miss), safety issue and hazard reported, including previous similar issues, so that any necessary action can be initiated; and

(2) ensure that knowledge of relevant incidents, safety issues and hazards is shared so that other persons and organisations may learn from them.

Part-145.A.202 Internal safety reporting scheme

(a) As part of its management system, the organisation shall establish an internal safety reporting scheme to enable the collection and evaluation of such occurrences that are to be reported under point 145.A.60.
(b) The scheme shall also enable the collection and evaluation of those errors, near misses and hazards reported internally that do not fall under point (a).
(c) Through that scheme, the organisation shall:
(1) identify the causes of, and contributing factors to, the errors, near misses and hazards reported, and address them as part of its safety risk management process in accordance with point 145.A.200(a)(3);
(2) ensure an evaluation of all known, relevant information relating to errors, near misses, hazards and the inability to follow procedures, and a method to circulate the information as necessary.
(d) The organisation shall make arrangements to ensure the collection of safety issues related to subcontracted activities.

Just Culture

Reporters shall be enabled to report without fear. Just culture policies are enshrined by law in the TM CAD and organisations procedures and safety policies, to ensure confidentiality, proper error management, fair treatment and protection of reporters. Willful misconduct, dereliction of duty and unacceptable behaviour may however lead to disciplinary actions and proceedings. This is applicable to organisations and the competent authority.

Occurrence Reporting Methodology

TM CAD has published Issue 2 Revision 1 of Occurrence Reporting - Information and Guidance on Mandatory and Voluntary Occurrence Reporting to the Transport Malta Civil Aviation Directorate Document reference CAD-OR which refers to the TM-CAD Occurrence reporting portal https://tmcad.centrik.net/SMS/Case/ExternalReport.aspx . This document presents two Annexes CAD-OR.01 and CAD-OR.02 which provide a step-by-step guide on the filing of Occurrence Reports to TM CAD.

Reporting Timescales

This IAN is also intended to bring to the attention of organisations and personnel of the requirement to report occurrences within the timescales established by the regulations.

Occurrences shall be reported within 72 hours of the reporter/organisation becoming aware of the occurrence unless exceptional circumstances prevent this.

It is worth stating that organisations should not strive to present any corrective actions or investigation report with the initial occurrence report as this may cause a delay in communication of the occurrence report. It is perfectly acceptable to submit a report on first opportunity, based on the information available and submit follow-up report(s) on the same occurrence to provide additional information and/or investigation results at a later stage.

Maintenance organisations staff is mandated to report the following occurrences:

1. Serious structural damage (for example: cracks, permanent deformation, delamination, debonding, burning, excessive wear, or corrosion) found during maintenance of the aircraft or component.

2. Serious leakage or contamination of fluids (for example: hydraulic, fuel, oil, gas or other fluids).

3. Failure or malfunction of any part of an engine or powerplant and/or transmission resulting in any one or more of the following: a. non-containment of components/debris; b. failure of the engine mount structure.

4. Damage, failure or defect of propeller, which could lead to in-flight separation of the propeller or any major portion of the propeller and/or malfunctions of the propeller control.

5. Damage, failure 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.

6. Significant malfunction of a safety critical system or equipment including emergency system or equipment during maintenance testing or failure to activate these systems after maintenance.

7. Incorrect assembly or installation of components of the aircraft found during an inspection or test procedure not intended for that specific purpose.

8. Wrong assessment of a serious defect, or serious non-compliance with MEL and Technical logbook procedures.

9. Serious damage to EWIS.

10. Any defect in a life-controlled critical part causing retirement before completion of its full life.

11. The use of products, components, or materials, from unknown, suspect origin, or unserviceable critical components.

12. Misleading, incorrect or insufficient applicable maintenance data or procedures that could lead to significant maintenance errors, including language issue.

13. Incorrect control or application of aircraft maintenance limitations or scheduled maintenance.

14. Releasing an aircraft to service from maintenance in case of any non-compliance which endangers the flight safety.

15. Serious damage caused to an aircraft during maintenance activities due to incorrect maintenance or use of inappropriate or unserviceable ground support equipment that requires additional maintenance actions.

16. Identified burning, melting, smoke, arcing, overheating or fire occurrences.

17. Any occurrence where the human performance, including fatigue of personnel, has directly contributed to or could have contributed to an accident or a serious incident.

18. Significant malfunction, reliability issue, or recurrent recording quality issue affecting a flight recorder system (such as a flight data recorder system, a data link recording system, or a cockpit voice recorder system) or lack of information needed to ensure the serviceability of a flight recorder system.

Confidential / Anonymous reporting

The reporter's identity and the identity of anyone mentioned in a voluntary (confidential) report shall be protected. The report shall not be disclosed unless necessary for safety. The report shall not be used, inside and outside the organisation, to blame the reporter or any person mentioned in it.

Suspected Unapproved Parts

Suspected Unapproved Parts (SUP) include products, components, or materials, from unknown, or suspect origin, or unserviceable critical components.

When in doubt about the origin of a part, maintenance organisations, aircraft owners, operators, independent certifying staff, manufacturers, and parts suppliers are invited to consult, in addition to the content of the EASA SUP webpage , the information reflected in SIB 2017-13R1 before accepting such a part into their organisations or before fitting it to an aircraft. If any part listed in the SUP list is found in stock, it is recommended that the part is quarantined to prevent installation until a determination can be made regarding its eligibility for installation.

Further information can be found in https://www.faa.gov/aircraft/safety/programs/sups .

Evaluation and Feedback

For organisations which have developed and apply a risk identification procedure acceptable to TM CAD, that identifies an actual or potential aviation safety risk as a result of their analysis of occurrences or group of occurrences reported, shall transmit within 30 days from the date of notification of the occurrence by the reporter, preliminary results of the analysis and action taken to TM-CAD. The report of the final results of the analysis should be made available to TM-CAD by no later than 3 months from the date of notification of the occurrence.

Notwithstanding the above, TM CAD may request information, clarification or mitigating action from the organisations following a report as deemed necessary.

Procedures

Procedures in the CAME, MOE/MOM, and MTOE pertaining to the organisation's Occurrence reporting and management shall establish a system for the collection, evaluation, processing, analysis, and storage of details of occurrences. Analysis of the occurrences shall be conducted to identify the safety hazards and determine any appropriate corrective or preventive action required to improve aviation safety.

This is based on the probability and severity of the occurrence in terms of safety.

It is recommended to utilise the following tables and guidelines for the evaluation of the tolerability of risks as presented in **ICAO (2018), Safety Management Manual (SMM) Doc 9859.**

Table 1 – Safety Risk Severity Table

Value	*Severity*	*Severity Description (customize according to the nature of the organisation)*
A	**Catastrophic**	• **Aircraft / equipment destroyed** • **Multiple deaths**
B	**Hazardous**	• **A large reduction in safety margins, physical distress or a workload such that operational personnel cannot be relied upon to perform their tasks accurately or completely** • **Serious Injury** • **Major equipment damage**
C	**Major**	• **A significant reduction in safety margins, a reduction in the ability of operational personnel to cope with adverse operating conditions as a result of an increase in workload or as result of conditions impairing their efficiency** • **Serious incident** • **Injury to persons**
D	**Minor**	• **Nuisance** • **Operating Limitations** • **Use of emergency procedures** • **Minor incident**
E	**Negligible**	• **Few consequences**

Table 2 – Safety Risk Probability Matrix

Value	*Meaning*	*Likelihood*
5	**Frequent**	**Likely to occur many times (has occurred frequently)**
4	**Occasional**	**Likely to occur sometimes (has occurred infrequently**
3	**Remote**	**Unlikely to occur, but possible (has occurred rarely)**
2	**improbable**	**Very unlikely to occur (not known to have occurred)**
1	**Extremely Improbable**	**Almost inconceivable that the event will occur**

Table 3 - Risk Index Matrix (severity x probability)

Safety Risk		Severity				
Probability		Catastrophic A	Hazardous B	Major C	Minor D	Negligible E
Frequent	5					
Occasional	4					
Remote	3					
Improbable	2					
Extremely Improbable	1					

Table 4 - Safety Risk Tolerability (acceptability) table

Safety Risk Index Range	Tolerability	Recommended Action Required
5A, 5B, 5C, 4A, 4B, 3A	INTOLERABLE	Take immediate action to mitigate the risk or stop the activity. Perform priority safety risk mitigation to ensure additional or enhanced preventative controls are in place to bring down the safety risk index to tolerable.
5D, 5E, 4C, 4D, 4E, 3B, 3C, 3D, 2A, 2B, 2C, 1A	TOLERABLE	Can be tolerated based on the safety risk mitigation , It may require management decision to accept the risk.
3E, 2D, 2E, 1B, 1C, 1D, 1E	ACCEPTABLE	Acceptable as is. No further safety risk mitigation required.

Safety Risk Assessment

Safety risk is the projected probability (likelihood) and severity of the consequence or outcome from an existing hazard or situation. The component of both probability and severity are combined to determine the risk index (Table 3).

Severity assessment can be based upon level/number of casualties (fatalities/injury) from the passengers, employees and persons on the ground and damage to aircraft, property and equipment. (Refer to Table 1)

Probability assessment can be determined by taking into consideration the history of occurrences, similarities and interdependencies, the extent of usage of equipment and procedures, the number of personnel involved in the procedures in question and organisation culture.

Risk Tolerability

The index obtained from the safety risk assessment matrix should then be exported to a safety risk tolerability table (Table 4) that describes graphically and conceptually the tolerability criteria for the particular organisation.

Risk Mitigation

Risk mitigating action is applicable whenever an unacceptable current tolerability level of an unsafe event or ultimate consequence is identified.

Risk mitigation actions are measures to reduce the likelihood of re-occurrence and the severity. When mitigating action is not possible the operation shall be stopped in case of a creditable outcome of unacceptable consequences.

Risk mitigation involves corrective actions in the form mechanism and defence to block or prevent a hazard from escalating into an unsafe event or ultimate consequence.

The mechanism and defence would usually involve procedures, practices, maintenance data, competence assessment and training of personnel, HF issues, troubleshooting and reliability programmes, incorporation of SB/AD's and liaison with OEM.

The organisation shall ensure that the results of the follow-up and lessons learned are shared with personnel as part of the safety risk mitigation, safety promotion and training.

Management of Occurrences

Systematic Management of reports enables the organisation to control and evaluate occurrences as part of Safety Management. The system should categorise and analyse safety events, monitor trends, check historical records and implement reliability programmes (when applicable), share information, perform evaluation of events and monitor corrective actions implementation.

The process cycle of reporting, analysis and closure shall be systematically documented. Depending on the size of organisation, databases and software platforms which tailor for the needs in the management of occurrences should be considered for use.

In the case of maintenance error occurrence/event, maintenance organisations should use MEDA (Maintenance Error Decision Aid) tools or equivalent for the determination of root causes and contributing factors of maintenance errors.

Safety Promotion

Safety promotion within organisations shall encourage open, constructive feedback and occurrence/error reporting from the personnel in proper timescales within a platform of just culture. This affects positively the behaviour and safety culture of the whole organisation.

Refer also to:
https://www.transport.gov.mt/aviation/safety-management/occurrence-reporting-3287
ICAO Safety Management Manual Doc 9859 (4th edition, 2018