

Advisory Circular

REPORTING AND INVESTIGATION OF REPORTABLE SAFETY MATTERS

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GENERAL

Advisory Circulars (ACs) are issued by the Director-General of Civil Aviation (DGCA) from time to time to provide practical guidance or certainty in respect of the statutory requirements for aviation safety. ACs contain information about standards, practices and procedures acceptable to CAAS. An AC may be used, in accordance with section 3C of the Air Navigation Act (Cap. 6) (ANA), to demonstrate compliance with a statutory requirement. The revision number of the AC is indicated in parenthesis in the suffix of the AC number.

PURPOSE

This AC provides guidance to demonstrate compliance with, and information related to, the requirements for mandatory reporting of reportable safety matters (RSMs)¹ and their investigation.

APPLICABILITY

This AC is applicable for the operator operating in accordance with ANR-91, ANR-121, ANR-135, ANR-125 or ANR-137.

RELATED REGULATIONS

This AC is related to:

- i) Regulation 50 and Third Schedule of ANR-91
- ii) Regulation 26 of ANR-119
- iii) Regulation 46 of ANR-125
- iv) Regulation 24 of ANR-137

RELATED ADVISORY CIRCULARS

- CAAS AC DGR-3: Mandatory Reporting of Dangerous Goods Incidents and Accidents

¹ 'Reportable safety matters' are previously referred to as 'mandatory reportable occurrences' and the associated reports were known as 'mandatory occurrence reports (MORs)'

CANCELLATION

This revision 1 supersedes revision 0 of AC 91-2-2. In this revision, more examples are provided for various reportable safety matters, and the guidance on reporting procedure is updated. Operators are reminded to conduct investigations as required under the respective regulations.

EFFECTIVE DATE

This AC is effective from 1 December 2020.

OTHER REFERENCES

- Singapore Airworthiness Requirements
- European Union Regulations, (EU) 2015/1018
- ECCAIRS Aviation 1.3.0.12 Data Definition Standard

1 INTRODUCTION

- 1.1 Pursuant to Section 4O of the Air Navigation Act (as amended 2014) that requires a responsible person to report certain safety matters, Regulation 50 of ANR-91 requires the operator of a Singapore aircraft to make such reports for the safety matters listed in the Third Schedule of ANR-91. The Third Schedule of ANR-91 also sets out the timeline that reports shall be made.

Note: The operator is also required to report on the safety matters listed in Chapter 4.9 of the Singapore Airworthiness Requirements.

- 1.2 RSM is one of the safety data sources that are used in safety performance monitoring. It is imperative that the operator reports any incident that meets the description of the RSM in the Third Schedule of ANR 91, including such an incident that the operator has assessed to have no undesirable safety outcome.
- 1.3 Notwithstanding the list in the Third Schedule, the operator should report any incident which is deemed to be related to or has the potential of affecting its flight safety. This will provide CAAS the data it needs to trend, analyse and identify impending safety issues and emerging risks.
- 1.4 These reports received by CAAS will be uploaded into the SAIRS² by CAAS to manage the RSM. It is based on the ECCAIRS software and the data is in the format aligned with ICAO taxonomy. CAAS makes use of the SAIRS to collate, analyse and monitor the safety trends of the Singapore aviation industry.
- 1.5 This AC provides examples and elaborate on some common incidents that are reportable. It also specifies the reporting and investigation processes.

2 EXAMPLES OF REPORTABLE SAFETY MATTERS

- 2.1 The Third Schedule of the ANR-91 lists broadly the reportable safety matters. The following provides some examples of such matters.

² SAIRS – Singapore Aviation Accident / Incident Reporting System.

Item (1) A near collision

- *Such as occurrences that require an avoidance manoeuvre, either in flight or on ground in order to avoid a collision or an unsafe situation or when an avoidance action would have been appropriate.*

Item (2) An incident that occurs during a critical phase of flight that has a high potential of causing an accident

- *Critical phase of flight refers to take-off, landing, approach, climb and taxi.*
- *This includes but not limited to actual or marginally avoided undershoots, overruns or running off the side of runways/helipads, or runway or taxiway incursions or excursions.*

Item (3) A take-off, landing, or attempted take-off or landing, on a closed, unassigned or engaged runway or helipad

- *This includes incidents on the taxiway.*

Item (4) An incident when Controlled Flight Into Terrain (CFIT) was only marginally avoided

- *This includes incidents when an emergency pull-up manoeuvre was conducted.*

Item (5) Any difficulty in controlling the aircraft

- *This includes:*
 - *Incidents due to system failure, weather phenomena or operations outside the approved flight envelope;*
 - *A loss of control both in flight or on ground; or*
 - *An aircraft upset, exceeding normal pitch attitude, bank angle or airspeed appropriate for the phase of flight.*

Item (6) Any flight crew incapacitation

- *This refers to any reduction in the wellbeing of a pilot to a degree or of a nature that affects the pilot's capacity to maintain vigilant engagement, physically or mentally, in his / her tasks as a flight crew.*
- *It includes "medical" causes, "external" factors (hypoxia, smoke inhalation, effects of a laser beam on vision, etc) and "flight environment" effects (that resulted in Spatial Disorientation, loss of Situational Awareness, etc.)*

Item (10) An event requiring the emergency use of oxygen

- *This does not include the use of oxygen by non-flight crew due to medical conditions.*

Item (11) Any gross failures to achieve predicted performance during take-off or initial climb

- *This includes failures during a go-around.*

Item (12) A declaration of emergency

- *Refers to declaration of emergency (PAN or MAYDAY) such as due to low fuel state, or system or component malfunctions / failures (exclude declaration of emergency for priority landing due to medical reason).*

Note: For situations where long holding time might result in low fuel states, operating crew should take the most appropriate course of action without jeopardizing aircraft safety.

Item (13) Any failure of, or significant damage to, aircraft structure or disintegration of any part of the engine or external part of the aircraft, or uncontained turbine engine failures, that is not classified as an accident

- *This includes tail, blade/wingtip or nacelle strike during take-off or landing.*

Item (16) A dangerous goods incident

- *This includes:*
 - *spillage, leakage of dangerous goods or damage to packages containing dangerous goods packages when such goods are transported on an aircraft or handled on the ground while under the responsibility of the air operator; or*
 - *unsecured and incorrect labelling, packaging and handling of dangerous goods.*

Item (17) Any carriage of dangerous goods in a manner that does not conform with the provisions of Annex 18 to the Chicago Convention and its Technical Instructions

- *This includes the discovery of undeclared, mis-declared or prohibited dangerous goods transported as cargo or in air mail or passenger baggage.*

Item (18) Any violation of local safety legislation or requirements

- *This includes:*
 - *fewer staff/crew members at the workplace than required by regulation;*
 - *rest time less than required by regulation;*
 - *operation with an invalid license or carrying out an operation not covered by the license; or*
 - *the exceedance of the duty time by a person.*

Item (19) An air turn-back

- *This does not include air turn back due to weather or medical reasons.*

Item (20) A diversion

- *This does not include diversions due to weather, medical reason or closure of planned airports.*

Item (21) A rejected take-off

- *This includes low speed rejected take-offs regardless of the reason why a rejected take-off was conducted.*

Item (22) A significant safety or security related event

- *This includes:*
 - *a bomb threat, a hijack or similar event, a security breach, a stowaway and severe turbulence;*
 - *any security incidents that the operator is cognisant of that may endanger the operation of an aircraft, or which causes or may cause a danger to persons or property; or*
 - *any security incidents related to the Aircraft Network Security Programme (ANSP).*

Item (23) Any circumstances requiring a manoeuvre to avoid collision with another aircraft other than a near collision

- *This includes the activation of Airborne Collision Avoidance System (ACAS) Resolution Advisory (RA).*
- *This does not include ACAS Traffic Advisory (TA).*

Item (26) A hard landing

- *This includes a landing in which the vertical deceleration encountered requires a hard landing check.*

Item (29) An air traffic control-related (ATC) event

- *This includes:*
 - *unclear or conflicting instructions and misinterpretation in communicating with ATC; or*
 - *unsafe or wrong ATC clearance.*

Item (29A) A loss of communication with air traffic control (ATC)

- *This includes poor, intermittent or loss of communication with ATC.*

Item (30) Any unintentional deviation of airspeed, intended track or altitude that result in the activation of a deviation notification

- *This includes:*
 - *a level bust; or*
 - *an unintended deviation of track that is due to wrong selection of waypoint during navigation.*

Note: All unintentional deviation should be reported as there are some aircraft that do not have deviation notification warning system.

Item (35) Any incapacitation of a cabin crew member that renders that cabin crew unable to perform critical safety duties

- *This includes crew fatigue or injuries sustained in turbulence.*

Item (39) Any use of incorrect or contaminated fuel, oil or other fluid

- *This includes oxygen, nitrogen or potable water.*

Item (40) Any underfuelling

- *This includes incidents of critically low fuel quantity or fuel quantity at destination below required final reserve fuel.*

Item (41) A loading or load sheet error

- *This includes:*
 - *handling or loading of passengers, baggage, mail or cargo, regardless of whether it has a significant effect on aircraft mass and/or balance; or*
 - *any error in loadsheet calculation.*

Item (43) Any other occurrence that endangers or may endanger the operation of an aircraft, or which causes or may cause a danger to persons or property

- *This includes:*
 - *unlawful interference or air rage;*
 - *wake-turbulence encountered;*

- *use of incorrect data or erroneous entries into equipment used for navigation or performance calculations;*
- *abnormal functioning of flight controls such as asymmetric or stuck/jammed controls;*
- *exceedance of aircraft flight manual limitation;*
- *landed fast at a speed significantly higher than the reference approach speed; or*
- *landed long behind the touch-down zone.*

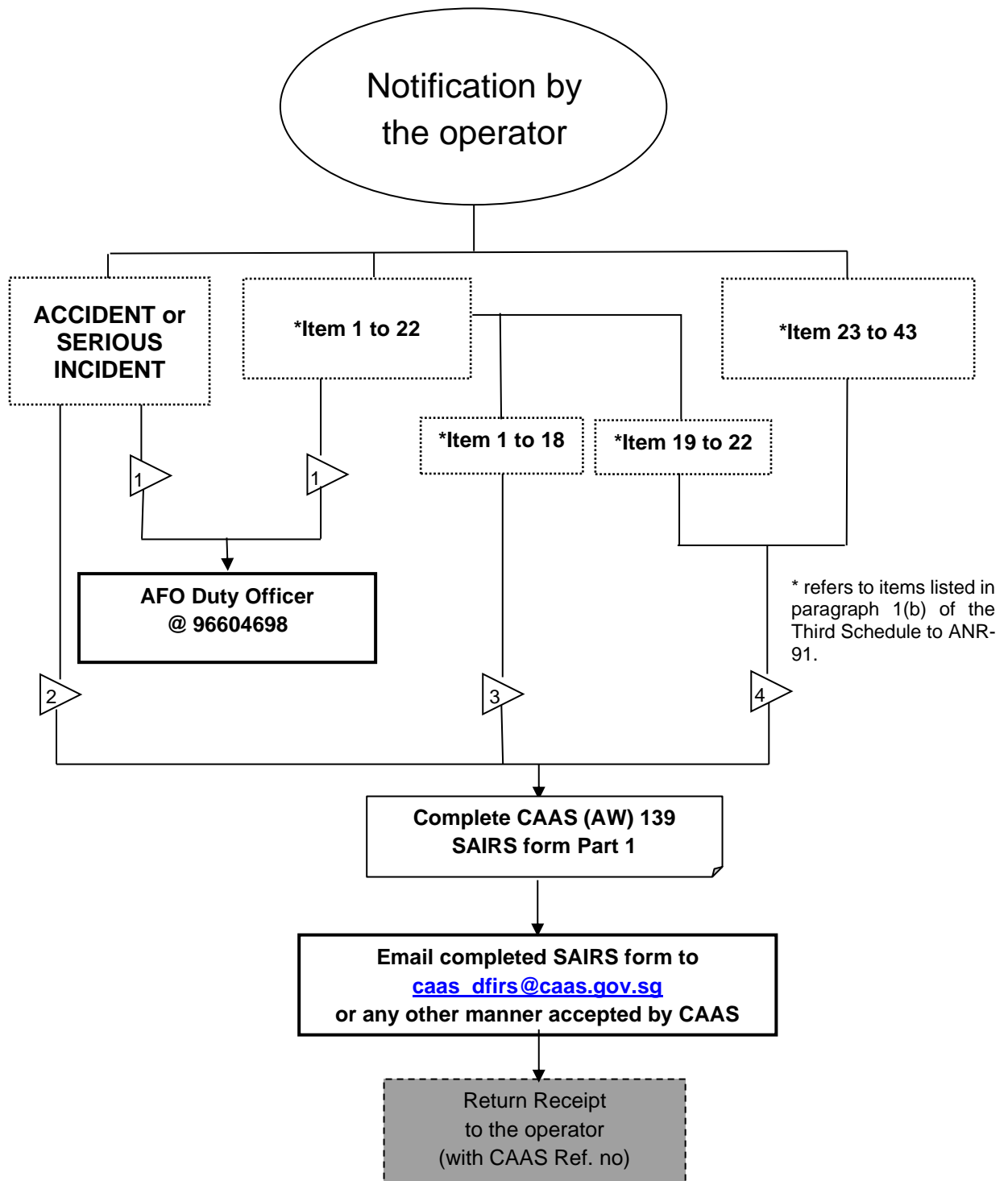
3 REPORTING PROCEDURE

- 3.1 The Third Schedule of ANR-91 mandates the submission of a formal notification to CAAS of any accident or incidents that is listed in the schedule. It also stipulates the timeframe for making a report.
- 3.2 A formal notification should be made using the CAAS(AW)139 SAIRS form – Part 1: Initial Notification. The form can be downloaded from the CAAS website at www.caas.gov.sg.
- 3.3 The operator or pilot-in-command should provide all available and accurate information in the initial notification. However, the operator should not delay the initial notification because of incomplete information. Follow-up reports should be provided as more information becomes available. The operator is strongly advised to provide prompt information to CAAS on the results of investigations and the actions taken to control the situation to minimise direct CAAS involvement in the investigative activity.
- 3.4 Formal notification are to be made by the operator through the submission of the completed CAAS(AW)139 form to CAAS via email or in any other manner acceptable to the Authority. Submission should be made to caas_dfirs@caas.gov.sg.
- 3.5 The Appendix provides the reporting process and the stipulated reporting deadlines.
- 3.6 For the reporting of occurrences related to the transport of dangerous goods as described in items (16) and (17) of paragraph 1(b) of the Third Schedule of ANR-91, only Part 4 of CAAS AW139 needs to be completed. Operators may refer to CAAS Advisory Circular AC-DGR-3, *Mandatory Reporting of Dangerous Goods Incidents and Accidents* on the reporting of such occurrences to CAAS.

4 RSM INVESTIGATION AND FOLLOW-UP

- 4.1 Regulation 26 of ANR-119, regulation 46 of ANR-125 and regulation 24 of ANR-137 require the respective operator to conduct the necessary investigation after an RSM occurs.
- 4.2 The outcome of investigations into RSMs that are classified as accidents or serious incidents are to be submitted to CAAS. CAAS may also request the operator to submit an investigation report for an incident that is not classified as an accident or serious incident. CAAS may also request the operator for a summary of its investigation reports of all its RSMs periodically.

APPENDIX SAIRS PART 1: INITIAL NOTIFICATION FLOW PROCESS



Verbal Notification

1 Immediate through most expeditious means (i.e. telephone, SMS)

Written Notification

2 Within 3 hrs from immediate verbal notification

3 Within 24 hrs

4 Within 72 Hrs