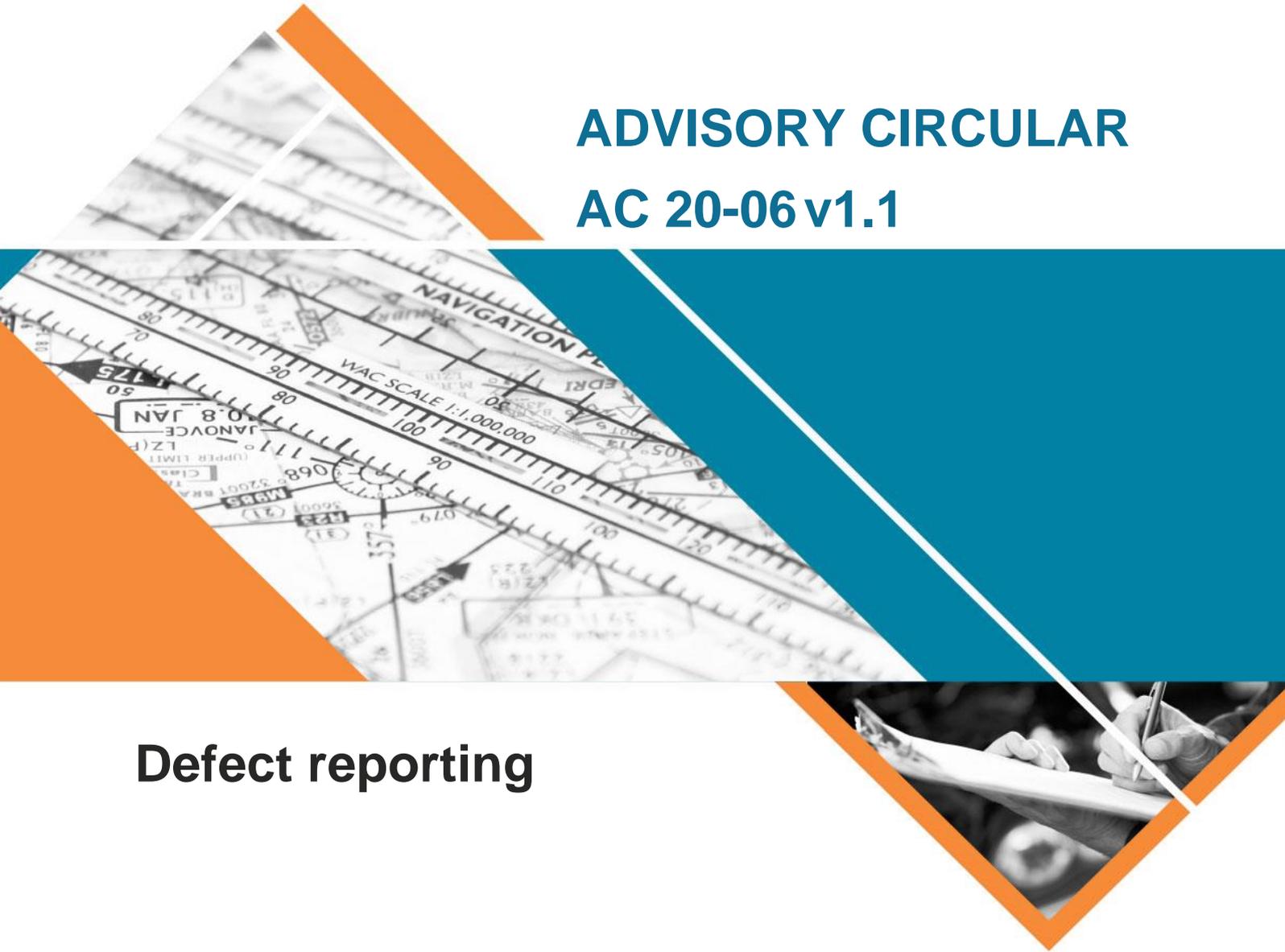




ADVISORY CIRCULAR

AC 20-06 v1.1



Defect reporting

Date	December 2022
File ref	D19/59892

Advisory circulars are intended to provide advice and guidance to illustrate a means, but not necessarily the only means, of complying with the Regulations, or to explain certain regulatory requirements by providing informative, interpretative and explanatory material.

Advisory circulars should always be read in conjunction with the relevant regulations.

Audience

This advisory circular (AC) applies to:

- Aircraft Engineer Licence holder
- Aircraft Registered Operators
- Air Operator's Certificate holders
- Approved Maintenance Organisation
- Certificate of Approval holders
- Continuing Airworthiness Management Organisations
- Pilots or other persons authorised to carry out maintenance.

Purpose

This AC provides guidance and information to people reporting defects to CASA in accordance with Part 4B of CAR or Division 42.C.4 and Subdivision 42.D.6.2 of CASR.

For further information

For further information, contact CASA's Defect Reporting Unit (telephone 131 757).

Status

This version of the AC is approved by the Branch Manager, Airworthiness and Engineering.

Note: Changes made in the current version are not annotated. The document should be read in full.

Version	Date	Details
v1.1	December 2022	Administrative review only.
v1.0	July 2019	Initial AC.

Unless specified otherwise, all subregulations, regulations, Divisions, Subparts and Parts referenced in this AC are references to the *Civil Aviation Safety Regulations 1998 (CASR)*.

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1 Reference material

1.1 Acronyms

The acronyms and abbreviations used in this AC are listed in the table below.

Acronym	Description
AD	Airworthiness Directive
AC	Advisory Circular
AOC	Air Operator's Certificate
AMO	Approved Maintenance Organisation
AMP	Approved Maintenance Program
CAMO	Continuing Airworthiness Management Organisation
CAR	<i>Civil Aviation Regulations 1988</i>
CASA	Civil Aviation Safety Authority
CASR	<i>Civil Aviation Safety Regulations 1998</i>
CMMS	Computerised Maintenance Management Software
CPCP	Corrosion Prevention and Control Program
DRS	Defect Reporting Service
MLG	Main Landing Gear
MPD	Maintenance Planning Document
RO	Registered Operator
SB	Service Bulletin
VHF	Very High Frequency

1.2 Definitions

Terms that have specific meaning within this AC are defined in the table below. Where definitions from the civil aviation legislation have been reproduced for ease of reference, these are identified by 'grey shading'. Should there be a discrepancy between a definition given in this AC and the civil aviation legislation, the definition in the legislation prevails.

Term	Definition
Major defect	<ul style="list-style-type: none"> • in relation to an aircraft, a defect of such a kind that it may affect the safety of the aircraft or cause the aircraft to become a danger to persons or property <li style="text-align: center;">or • in relation to an aircraft component (CAR) or aeronautical product (CASR) that is not fitted to an aircraft, a defect of such a kind that if the component is fitted to an aircraft it may affect the safety of the aircraft or cause the aircraft to become a danger to persons or property.

Term	Definition
Malfunction	When a part of an aircraft structure, aircraft engine, propeller, system or component fails to operate in the manner for which it was designed.
Failure	The lack of expected or satisfactory performance. (Example: the overloading or overstraining of a structure to such an extent that it can no longer perform its required function).

1.3 References

Legislation

Legislation is available on the Federal Register of Legislation website <https://www.legislation.gov.au/>

Document	Title
Part 4B of CAR	Defect reporting
CASR Division 42.C.4	Major defects—reporting and investigating
CASR Division 42.E.4	Requirements for controlling unapproved parts.
Subdivision 42.D.6.2	Reporting defects

Advisory material

CASA's advisory materials are available at <https://www.casa.gov.au/publications-and-resources/guidance-materials>

Document	Title
AC 20-03	Identification and management of aeronautical products

1.4 Forms

CASA's forms are available at <http://www.casa.gov.au/forms>

Form number	Title
Form 404	Defect Report

2 Introduction

2.1 Defect reporting

- 2.1.1 Australia is a signatory to the Chicago Convention, and therefore has an obligation to have a service difficulty reporting system in place.
- 2.1.2 ICAO standards require air operators, organisations responsible for type design and maintenance organisations to report to their airworthiness authority, all faults, malfunctions, defects and other occurrences which cause or might cause adverse effects on the continuing airworthiness of the aircraft.

2.2 Purpose of the Defect Reporting Service

- 2.2.1 The purpose of the Defect Reporting Service (DRS) is to:
- permit the assessment of reports to detect trends in the Australian aircraft fleet and aeronautical products
 - permit timely airworthiness and safety oversight of the Australian aircraft fleet
 - provide feedback to industry to promote aircraft and product improvement
 - assist in long term improvement in design, manufacturing and maintenance standards.

2.3 Defect reports

- 2.3.1 CASA uses defect reports as a means of identifying trends in design and maintenance reliability for the benefit of aviation safety. Reports are collected by CASA and maintained in a database. It is of benefit to both CASA and the aviation industry that the database contains accurate and relevant information. From this database, information may be:
- obtained to provide reliability statistics and trend monitoring of aircraft, engines, propellers, systems and components - CASA shares this information with other regulatory authorities
 - used as a basis for development or review of an Airworthiness Directive (AD)
 - used for the development of other advisory publications, such as Airworthiness Bulletins
 - used for other appropriate regulatory purposes.
- 2.3.2 The DRS system automatically generates a receipt for reports entered via the portal.
- 2.3.3 CASA does not provide a written response for each defect report that is received and does not conduct an investigation in every case. Nonetheless, CASA encourages operators and maintainers to submit safety related defect reports and will contact the affected parties if more information is required.
- 2.3.4 A de-identified searchable summary of submitted data is available on CASA's website.
- 2.3.5 CASA also selects some defect summaries that may be of interest to the aviation community and publishes them in the [Flight Safety Australia magazine](#).

2.3.6 Other defect summaries can be obtained from other international authorities through the following web sites:

- [Federal Aviation Administration](#) (FAA)
- [Transport Canada](#) (TC)

2.3.7 Archived records are also available from the CASA Defect Reporting Unit.

3 Reportable defects for aircraft maintained under CAR

3.1 Overview

3.1.1 Part 4B of CAR states that those who own, operate or maintain Australian aircraft must advise CASA of the existence of any:

- major defect related to an aircraft
- defect discovered while complying with an AD or a direction given by CASA
- defect in an aircraft or an aircraft component that if installed in an aircraft would affect its safety or result in a danger to person or property.

3.1.2 Failure to report a defect when required by the regulations is an offence of strict liability and may result in prosecution and/or administrative action.

3.2 Major defects requiring immediate notification (51A of CAR)

3.2.1 All major defects to which regulation 51A of CAR applies discovered in an aircraft must be reported to CASA immediately. Examples of major defects are listed at 9.2.2 Appendix A.

3.2.2 Regulation 51A of CAR applies to major defects:

- that have caused, or that could cause, a primary structural failure in an aircraft
- that have caused, or that could cause, a control system failure in an aircraft
- that have caused, or that could cause, an engine structural failure in an aircraft
- caused by, that have caused, or that could cause, fire in an aircraft.

3.3 Defects discovered while complying with an AD or direction

3.3.1 When a defect is discovered while complying with an AD or a CASA direction, a report must be submitted in the following cases:

- the AD or direction requires a report - such reports are to be submitted as specified in the AD or direction
- the defect is not the subject of the AD or direction and has an adverse effect on safety - such defects are to be reported within two working days (i.e. it is not necessary to report defects that are the subject of the AD or direction unless specifically instructed).

3.4 Other defects

3.4.1 Other defects (those covered by regulation 51, 51B and 52 of CAR) must be reported to CASA within two working days of their discovery.

Note: Defects caused by maintenance errors should be reported to the operator or maintenance organisation - it is not necessary to report isolated maintenance errors via the CASA defect reporting system.

4 Reportable defects for aircraft maintained under CASR

- 4.1.1 CASR Division 42.C.4 - Major Defects - Reporting and investigating, sets out the defect reporting requirements for the person responsible for continuing airworthiness of the aircraft.
- 4.1.2 CASR Subdivision 42.D.6.2 contains defect reporting requirements for maintainers.
- 4.1.3 See the Part 42 AMC/GM document for specific advice on defect reporting requirements under Part 42.

5 Defects for aircraft covered by Approved Self-Administering Organisations

- 5.1.1 For aircraft covered by Approved Self-Administering Organisations (ASAOs), please refer to the Defect Reporting procedures of the relevant organisation.

6 Defects that do not need to be reported

- 6.1.1 The defects in the list below do not require reporting through the Defect Reporting Service.
- 6.1.2 Note that the list below describes general circumstances and is not definitive. Discretion remains with the person responsible for reporting defects to report a defect if they consider it is warranted in the circumstances. In particular, if any of the circumstances mentioned below reveal a previously unforeseen safety issue then a defect report should be submitted.
- a. Any defect that does not affect safety (including the aircraft, passengers, crew and third parties).
 - b. Anticipated defects found during compliance with manufacturers' maintenance instructions (i.e. it is not necessary to report a defect that is the subject of a manufacturer's inspection).
 - c. Bird / animal strike.
 - d. Damage caused by impact with objects on the ground (e.g. collision with ground service equipment).
 - e. Transient conditions where a fault cannot be confirmed (when a fault is confirmed, and it is a major defect, then it must be reported accordingly).
 - f. Defects caused by isolated maintenance errors (these should be reported to the operator and maintenance organisation).
 - g. For aircraft undergoing heavy maintenance, level 2 corrosion need not to be reported, provided:
 - i. an approved Corrosion Prevention and Control Program (CPCP) / Reliability program is in force,
 - ii. the relevant area is covered by Maintenance Planning Document (MPD) / Zonal or local task cards,
 - iii. in service literature is available indicating that the OEM is aware of the repeated findings and intended to introduce a Service Bulletin (SB) in future and/or change the design, and
 - iv. continued airworthiness (as per applicable regulations) of completed repairs is managed internally between the operator and Approved Maintenance Organisation (AMO) i.e. archiving, Approved Maintenance Program (AMP) update, repeat inspection set up in Computerised Maintenance Management Software (CMMS), if a repair introduces a change to the AFM, necessary information is relayed to Flight Operations in a timely manner.

7 Preparing and submitting a defect report

7.1 Responsibility for submitting a defect report

7.1.1 For aircraft maintained under CAR

- 7.1.2 The Registered Operator (RO) of the aircraft may, under a contractual agreement, assign the task of reporting major defects to their Maintenance Organization.
- 7.1.3 Overall responsibility for submission of the required report lies with the RO of the aircraft. It is the responsibility of the RO to ensure that any necessary investigation into the cause of the defect is carried out and the results submitted to CASA.

7.1.4 For aircraft maintained under Part 42 of CASR

- 7.1.5 It is the responsibility of the person responsible for continuing airworthiness (generally the CAMO) to ensure that aircraft defects are reported to CASA. The regulations also state that when an AMO becomes aware of a major defect that it must be reported to the CAMO. Major defects discovered by component AMOs are to be reported to CASA by the AMO.
- 7.1.6 If you have a defect tracking system and would like to use an output from the system as a defect report, please contact the Defect Reporting team by email, <defect.reports@casa.gov.au> to discuss requirements.

7.2 Time limits

- 7.2.1 A defect report must be submitted within the time limits specified by the regulations.
- 7.2.2 If all the required information is not available within the required time limit for submitting the report, the submitter should state on the defect report that the report is still open.
- 7.2.3 When the investigation has been completed, the submitter must file a final defect report.
- 7.2.4 If the investigation will take more than two months to complete, the submitter should provide one or more follow-up (interim) reports. These reports should be submitted whenever the investigation has reached one of its milestones or a finding significant for the safety of operation has been established.

7.3 Describing the defect

- 7.3.1 When reporting a defect, provide as much descriptive information as possible about the cause of the problem. Any attachments, such as photographs and sketches of defective parts, are also useful. However, you should not submit any physical parts to CASA unless directed to do so by CASA.
- 7.3.2 The use of abbreviations in defect reports should be kept to a minimum, unless used universally (e.g. MLG).

7.4 Submitting a defect report

7.4.1 Defect reports can either be submitted:

- online through the CASA Defect Reports Portal (preferred)
or
- by submitting a Defect Report Form (Form 404 Defect report). The form is available from the CASA website <<https://www.casa.gov.au>>

7.4.2 CASA Defect Reports Portal

7.4.2.1 To assist in reporting defects, CASA has developed a Defect Reporting Service (DRS) which is an online database designed to make report submission as easy as possible. The DRS can be accessed via the CASA website <<https://www.casa.gov.au>>

7.4.3 Form 404 - Defect Report

7.4.3.1 CASA has also produced a hard copy Defect Report form (Form 404). This form is available from the CASA website <<https://www.casa.gov.au>>

7.4.4 Where to submit defect reports

7.4.4.1 Submit a defect report to CASA by:

- **On-line:** Submit a defect report through the CASA [Defect Reporting Service Portal](https://drs.casa.gov.au) <<https://drs.casa.gov.au>>
- **Email:** defect.reports@casa.gov.au
- **Mail:** Freepost from anywhere within Australia, a completed Defect Report form (Form 404 - available from the CASA website) to:
Civil Aviation Safety Authority
Defect Reports
Airworthiness and Engineering Branch
Reply Paid 2005
Canberra ACT 2601

8 How to submit major defect reports

8.1 Major defect reports

8.1.1 For defects requiring immediate notification, CASA requires a notification of the defect in the first instance. CASA will require a complete report to follow up the initial notification.

- **Phone:** Defect Reporting Unit on 131 757 (business hours (AEST))
- **On-line:** Submit a defect report through the CASA [Defect Reporting Service Portal <https://drs.casa.gov.au>](https://drs.casa.gov.au)
- **Email:** defect.reports@casa.gov.au

8.1.2 If you have your own internal reporting system and want to submit reports generated by your system to CASA, please liaise with the CASA Defect Reporting staff for guidance on the format and structure of the report.

9 Reported information and defective parts

9.1 Use and disclosure

- 9.1.1 CASA will only use or disclose information reported under the DRS for purposes consistent with the interests of safety and in accordance with applicable laws.

9.2 Defective parts storage

- 9.2.1 CASA may request access to aircraft or parts associated with a major defect. The person responsible for the aircraft or part must take reasonable steps to ensure that defective parts are kept in a state that will allow CASA to investigate the defect.
- 9.2.2 CASA may request access for up to 12 months, but CASA can and usually does, on request, release parts for repair or disposal at an earlier time.

Appendix A

Examples of major defects

A.1 Examples of reportable defects

Listed below are some representative examples of reportable defects. The list is not exhaustive and may vary depending on the type of aircraft and redundant systems in place. In all cases the person responsible for reporting defects should assess the safety effect of the defect in relation to the particular aircraft and operation. If the safety assessment shows the defect is not a major defect, or is not otherwise required under the regulations to be reported, then a defect report is not required.

If you have any doubt about whether a defect is a reportable defect, you can seek advice from the CASA defect report group by email <defect.reports@casa.gov.au> or phone 131 757:

- a. fires during flight, whether the related fire warning system operated correctly or not
- b. false fire warning during flight
- c. smoke, toxic or noxious fumes inside the aircraft
- d. an engine exhaust system failure which causes damage during flight to the engine, adjacent structure, equipment or parts
- e. contained or uncontained engine failure
- f. commanded or uncommanded engine shut-down
- g. inability to feather or unfeather a propeller, to shut-down an engine or to control thrust, or inflight propeller loss
- h. serious malfunction of flight controls
- i. fuel system malfunction affecting fuel supply and distribution
- j. significant contamination or leakage of fuel, oil or other fluids
- k. landing gear failing to extend or retract, or uncommanded opening or closing of landing gear doors during flight
- l. brake system defects that result in inability or reduction in ability to brake when the aircraft is in motion on the ground (e.g. the defect results in braking performance significantly below minimum performance limits)
- m. a defect causing uncontrollable cabin pressure
- n. serious cracks or corrosion in the primary structure (level 2 (refer to section 6) or 3 only)
- o. failure of helicopter main rotor gearbox, which could lead to an in-flight separation of rotor assembly and / or loss of rotor control
- p. defective helicopter driveline parts (e.g. tail rotor)
- q. EWIS defects that affect the safety of the aircraft
- r. separation of any part of an aircraft, which may become a hazard to the aircraft or persons
- s. failures in digital computer-based equipment and systems, categorised as critical or essential (i.e. level A or B software), and the digital computer software used in this equipment, or system which is software whose anomalous behaviour, would cause or contribute to a failure of system function resulting in a hazardous condition for the aircraft¹.

¹ Definitions for the classification of equipment, systems and software are contained in Radio RTCA Inc. publication RTCA/DO-178B.

- t. significant malfunction of emergency equipment including those witnessed during maintenance testing e.g. slide not deployed during emergency drill etc.
- u. significant malfunction of flight recorder system.