



1. Effectivity

All Cessna 100, 200, 300 and 400 series aircraft.

2. Purpose

This is an explanatory document for all owners, registered operators and maintainers of Cessna aircraft related to the requirement to comply with Cessna Supplemental Inspection Documents (SIDs), to ensure the continued airworthiness of the affected Cessna aircraft.

This document should be read in combination with [Aviation Ruling 01/2014](#) – Compliance with Supplemental Inspection Documents (dated 18 December 2015).

3. Updates since initial issue

The main changes to this AWB from previous issues are to advise that:

- Exemption instrument [CASA EX26/14](#) has been amended to extend the compliance date for C200 series aircraft engaged in Private category and C100 series aircraft engaged in Aerial Work and Charter categories from 31 December 2015 until 31 March 2016.
- Exemption Instrument number [CASA EX 110/15](#) has been published. Therefore, SEB03-1 Elevator Rivet Installation is not required unless any working or loose fastener is detected, or the airframe has been significantly modified so as to change the loading of the horizontal stabilisers. In addition, the exemption also provides for maintainers to certify for the completion of the SIDs, without necessarily carrying out SEB03-1.
- In relation to compliance with all other Cessna Service Bulletins, the Aviation Ruling is intended to ensure compliance only with those Service Bulletins related to the structural integrity of Principal Structural Elements (PSEs). Any service bulletin called up in a SID requirement for a non-PSE is not considered mandatory by CASA.
- Although highly recommended, CASA does not consider landing gear and attachments to be PSE for the purposes of compliance with the SIDs. This was a deliberate action intended to provide a measure of relief to industry.
- The requirement to undertake a SID inspection is triggered whenever an applicable Total Time In Service threshold (i.e. 10,000 hours) or a calendar based threshold (i.e. 20 years) has been reached – which ever occurs first.
- The Cessna SID inspection publication is an extensive document requiring in-depth research to extract applicable individual SID inspections and intervals for each relevant aircraft.



Updated Compliance Table

Aircraft Series	Operational Category	Compliance Date
300 400	All	31 December 2014
200	Aerial Work/Charter	31 July 2015
200 100	Private Aerial Work/Charter	31 March 2016
100	Private	30 June 2016

4. Applying for exemptions

If you wish to apply for an exemption or variation from full compliance with the SIDs please make applications to the Manager Continuing Airworthiness using the address details below.

The application should include:

- The applicant's contact details and ARN.
- Aircraft details (including hours/cycles).
- Details of which provision of the SIDs the exemption application covers.
- Details of how the applicant proposes to meet the safety requirement of the SID.

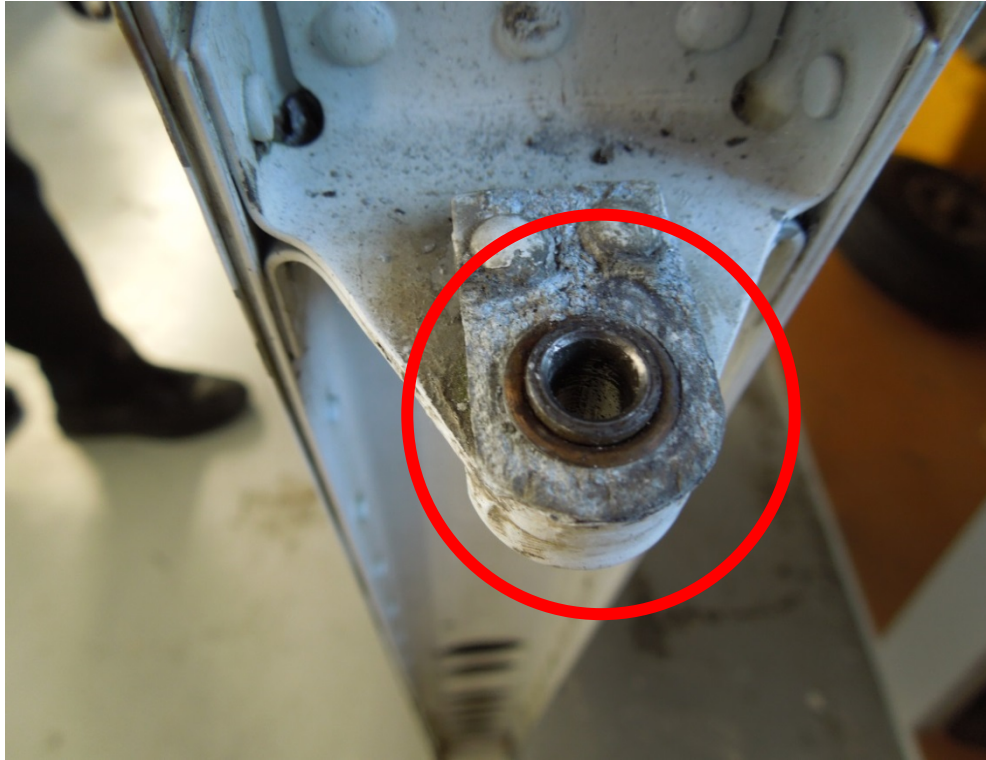
For any exemptions or variations from full compliance with the applicable SIDs, CASA recommends the engagement of a CASR 21.M Authorised Person to provide engineering justification for such exemptions or variations to allow for CASA consideration under CAR 2A Approved Maintenance Data. This includes any adaptation of the SIDs requirements to take into account pre-existing, non-Cessna approved modifications, Supplemental Type Certificates (STCs) or repairs.

CASA will only approve applications which demonstrate at least an equivalent level of safety to the SIDs document. The application may be subject to CASA cost recovery action.



5. Background

Every aircraft, Cessna or otherwise, ages from its day of manufacture. However, the rate an individual aircraft ages depends on how that particular aircraft has been operated, maintained and stored over its life. Every aircraft will age in a unique manner depending on its own circumstances.



Centre Rudder Hinge Mount Corrosion

Older aircraft (the average age of the Australian piston engine aircraft fleet is approximately 40 years), were built to the design, certification and maintenance standards applicable at the time. Many individual aircraft have now been operated well beyond the manufacturer's original design service goals.

In many cases limitations existed in the fatigue life assessments, corrosion protection coatings, production methods and anticipated operational profiles and roles for the aircraft produced, particularly in relation to General Aviation (GA) aircraft.

These older aircraft are not necessarily unsafe (chronological age of an aircraft is only one factor impacting the airworthiness of an aircraft), however, this is provisional on the maintenance program being adapted to take into account the ageing process of that aircraft over time.



Cessna 172 Channel Splice

As a result of the growing concern of the safety of their increasingly ageing fleet, Cessna and the Federal Aviation Administration (FAA) commenced work on the SIDs Development Program for their products in the late 1990s. Comprehensive engineering studies were conducted by Cessna and the US Department of Transport commencing with the Cessna Model 402¹.

These studies, progressively undertaken across all Cessna piston engine aircraft, were based on operational data and feedback surveys from the world-wide aircraft fleet, including that of defect reports, service-life simulations of actual flight profiles and feedback from operators, owners and National Aviation Authorities (NAAs).

The investigations identified critical areas of Principal Structural Elements (PSEs) on the aircraft that have been proven, through service-life experience, to be susceptible to fatigue or corrosion damage. In many cases these PSEs have not been seen, disassembled or inspected since the aircraft was manufactured as long as 40 years ago or more.

The SIDs programs provide an inspection regime to ensure the structural integrity of the airframe is maintained. These supplemental inspections complement those inspections undertaken during existing scheduled maintenance activities, as the failure of such PSEs could result in catastrophic loss of the aircraft.

1. DOT/FAA/AR-98/66 Supplemental Inspection Document Development Program for the Cessna Model 402



Compliance with Cessna Supplemental
Inspection Documents (SIDs)

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Date 22 December 2015

In addition, the SIDs also introduce fixed retirement lives for each aircraft model series, beyond which the continued airworthiness of the aircraft can no longer be assured (refer to the applicable SIDs for the relevant Cessna aircraft series).

Please be advised, it is a requirement under CAR 51 and CAR 51A for the Registered Operator to report defects to CASA.



Cessna U206G Main Landing Gear fitting

6. Ongoing Requirements

The requirement to undertake the Cessna SIDs, which includes on-going inspections where specified, applies irrespective of the category of operation or the elected maintenance schedule for the aircraft:

- CAR 42A Manufacturer's Maintenance Schedule,
- CAR 42B CASA Maintenance Schedule (Schedule 5), or
- CAR 42C Approved System of Maintenance.

In relation to compliance with all Cessna Service Bulletins, the Aviation Ruling is intended to ensure compliance only with those Service Bulletins related to PSEs. PSE components can be classified in the following manner:



- The component contributes significantly to carrying flight and ground loads *, and
- If the component fails, it can result in catastrophic loss of the airframe.

Typical examples of PSEs include:

- Wing and empennage:
 - Control surfaces, flaps and their mechanical systems and attachments (hinges, tracks and fittings),
 - Primary fittings,
 - Principal splices,
 - Skin or reinforcement around cut-outs or discontinuities,
 - Skin-stringer combinations,
 - Spar caps, and
 - Spar webs.
- Fuselage:
 - Circumferential frames and adjacent skin,
 - Door frames,
 - Pilot window posts,
 - Bulkheads,
 - Skin and single frame or stiffener element around a cut-out,
 - Skin and/or skin splices under circumferential loads,
 - Skin or skin splices under fore and aft loads,
 - Skin around a cut-out,
 - Skin and stiffener combinations under fore-and-aft loads,
 - Door skins, frames and latches, and
 - Window frames.
- Engine support structure and mounts.

Significantly, the SIDs were developed on the assumption that the aircraft had been maintained using the Manufacturer's Maintenance Schedule, or equivalent (including the incorporation of all applicable Service Bulletins). The SIDs do not necessarily take into account the effect of non-OEM approved modifications or repairs made to the aircraft since manufacture.

Therefore, all Service Bulletins that directly relate to the PSEs of the aircraft need to be incorporated to be in compliance with the SIDs inspections. Please note that some Service Letters and other information called-up by the SIDs requirements were originally discretionary in nature. These documents are now considered mandatory if referred to as part of the SIDs inspections requirements in relation to PSEs (with the exception of landing gear and attachments).

* Although highly recommended, CASA does not consider landing gear and attachments to be PSE for the purposes of compliance with the SIDs. This was a deliberate action intended to provide a measure of relief to industry.



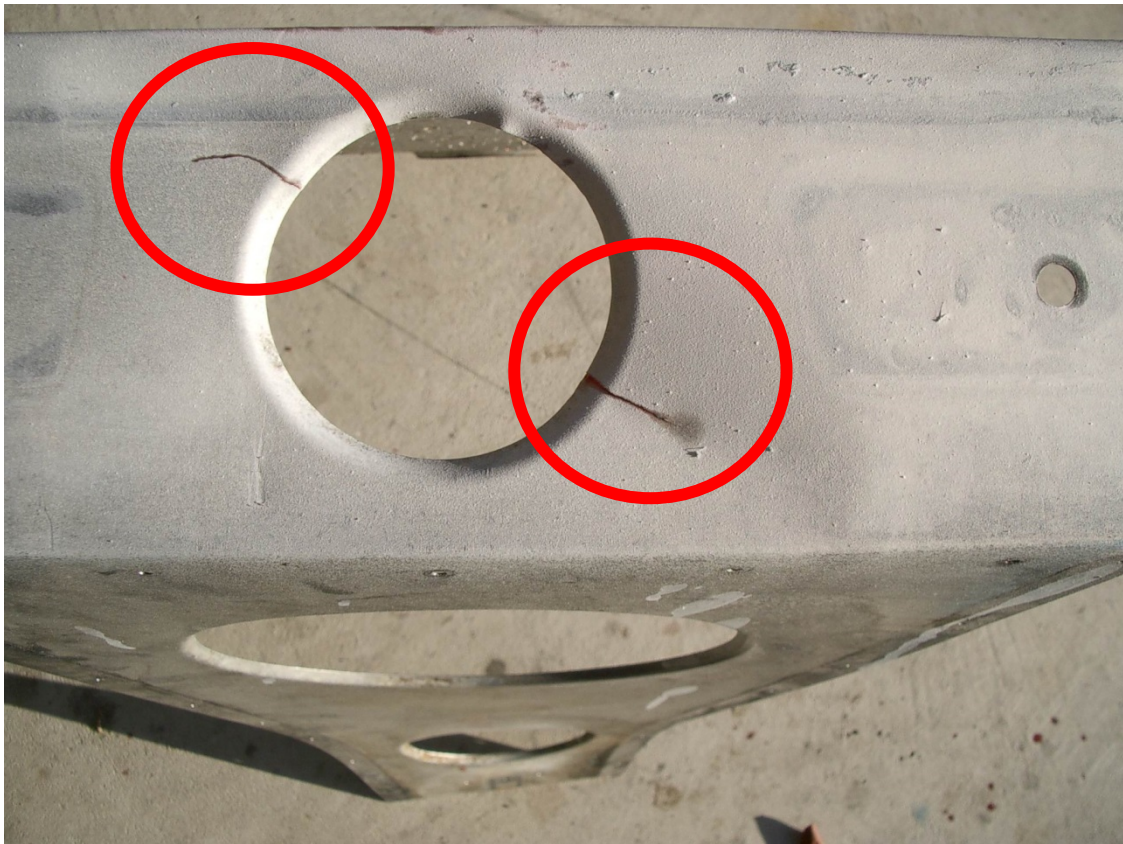
Cessna 177RG Stabiliser Balance Arm Brackets

For aircraft that have been modified or repaired in a manner different to this, the engagement of a CASR 21.M Authorised Person may be required to ensure that the impact of any changes to the aircraft's original configuration on the ability to comply with the SIDs are considered and appropriately addressed.

The requirement for ageing aircraft programs such as the SIDs for GA fleets is not constrained to Cessna products. However, Cessna is one of the few GA manufacturers to have developed this ageing aircraft initiative to such a comprehensive extent.



Cessna 152 vertical fin corroded under the skin of the fairing



Cessna 172 Horizontal Stabilizer Front Spar Cracking

7. Log Book Statement Part 1

The requirement to undertake the SIDs should be written in the Log Book Statement Part 1 (CASA Form 925/942 or equivalent) by the Registered Operator.

8. Certifying for incorporation of the SIDs and defect reporting

A Log Book entry should be made along with any recurring maintenance requirements where applicable (CASA Form 928 or equivalent). Final certification for the completion of each required task in the SIDs should be made in the Aircraft Maintenance Certification Log (CASA Form 924 or equivalent).

In addition, any damage discovered to structure, functional systems or propulsion systems should be reported to CASA and the manufacturer in accordance with the requirements of CAR 51 and CAR 51A as well as Defect Report CAAP 51-1(2).



9. Summary

Registered operators of Cessna aircraft are to comply with the SIDs irrespective of their nominated maintenance schedule. Refer to Aviation Ruling 01/2014 of 30 June 2015 for compliance time-frames.



Cessna 182H Flap Well Rib

10. Enquiries

Enquiries with regard to the content of this Airworthiness Bulletin should be made via the direct link e-mail address:

AirworthinessBulletin@casa.gov.au

or in writing, to:

Airworthiness and Engineering Standards Branch
Standards Division
Civil Aviation Safety Authority
GPO Box 2005, Canberra, ACT, 260