

Airworthiness Bulletin

AWB 57-019 Issue 1 – 03 October 2023

CT/4B Wing Rear Spar Cracking

An Airworthiness Bulletin is an advisory document that alerts, educates and makes recommendations about airworthiness matters. Recommendations in this bulletin are not mandatory.

1. Effectivity

Pacific Aerospace CT/4B aircraft, all S/N.

2. Purpose

To direct operators to the critical fastener location where a Detailed Visual Inspection (DVI) is mandated per Civil Aviation Authority of New Zealand (CAA NZ) Airworthiness Directive (AD) DCA/CT4/9 and to assist with crack detection.

3. Background

The airworthiness bulletin (AWB) is raised in response to a significant crack identified, that has developed within the rear spar of a CT4/B aircraft where the wing fitting ends in the spar web, which is located just forward of the flaps. The Australian Transport Safety Bureau (ATSB) looked at the fracture surfaces and made some conclusions on how the crack developed. This AWB promulgates some of those findings regarding SDR 612155995 and the CAA NZ AD DCA/CT4/9.

According to the ATSB findings and as shown in Figure 1 and Figure 2, the fastener where the cracking has been identified previously, has only a small distance around the fastener where the crack can be detected visually before it progresses under the flap close out panel.



Figure 1: CAA NZ AD DCA/CT4/9 Critical Fastener Location Near Rear Spar Wing Root

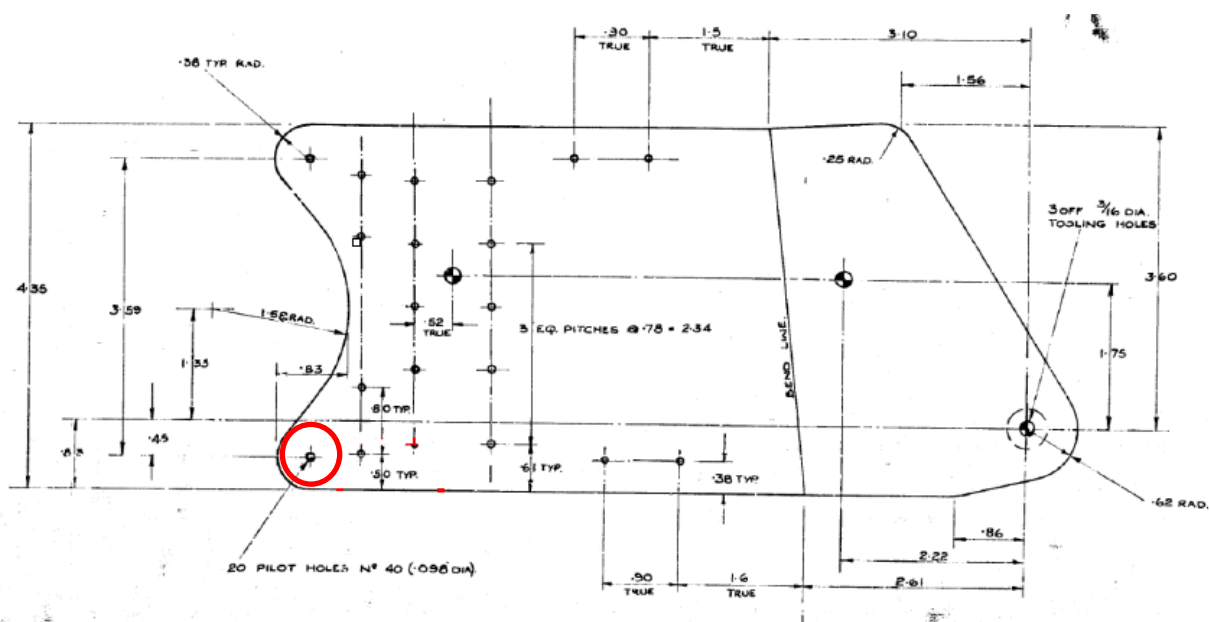


Figure 2: Critical Fastener Detail on Rear Leaf Pickup Bracket (Drawing 07-10019)

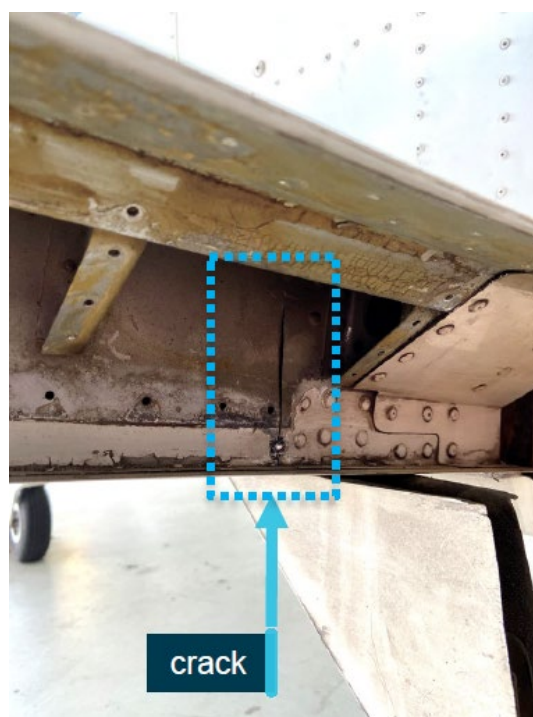


Figure 3: Cracks Emanating Above and Below the Critical Hole (Flap closeout panel removed in this photo)

The unsafe condition is managed by CAA NZ AD DCA/CT4/9.

A DVI is required per the CAA NZ AD DCA/CT4/9 with a 50 Hr inspection interval.



4. Recommendations

CASA recommends looking for cracks emanating from the critical fastener hole in both directions, above and below the critical hole and as shown in Figure 3 and per the instructions in CAA NZ AD DCA/CT4/9.

Whilst the mandated Detailed Visual Inspection (DVI) defined in CAA NZ AD DCA/CT4/9 is for the inboard area of the rear spar, CASA advise that the critical rivet identified in Figure 1 was where the subject aircraft was found to be cracked. There is just a small distance around the fastener where the crack can be detected visually. Otherwise the crack will progress under the flap close out panel where it is not detectable without removal.

A DVI is required per the CAA NZ AD DCA/CT4/9 with a 50 Hr inspection interval. The inspection includes both LH and RH wings of the airplane.

Also look for any anomalies around the rivets including loose, missing, or smoking rivets (black deposits as a result of fretting) which was known to be a precursor to the defect identified previously. Look for any misdrilled holes or damaged rivets.

5. Reporting

Report any findings to CASA via the Defect Reporting System (DRS) and the Type Certificate Holder.

6. Enquiries

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

AirworthinessBulletin@casa.gov.au

or in writing, to:

Airworthiness and Engineering Branch
National Operations and Standards
Civil Aviation Safety Authority
GPO Box 2005, Canberra, ACT, 2601