



Civil Aviation Safety Authority of Papua New Guinea

(This Airworthiness Directive (AD) is issued pursuant to Section 17 of the Civil Aviation Act 2000(as amended) Civil Aviation Rule Part 39. The continuing Airworthiness of a PNG registered aircraft is contingent upon compliance with all applicable ADs.)

PNG AD-2016-01 Rev. 1: Aircraft Primary Flight Control Cable Terminals – Detailed Visual Inspections

Revision 1: 20/11/2017

Revision:

This revision supersedes original issue of AD-2016-01 dated 12th April 2016. The revision amends the requirement to replace cables with an inspection.

Applicability:

All fixed wing aircraft fitted with primary flight control cable assemblies using swaged terminal fittings specified to have been manufactured from SAE-AISI 303 Se or SAE-AISI 304 stainless steel if the cable terminal fittings have 15 years or more time in service (TIS).

Cable terminal fittings with unknown TIS are assumed for the purpose of this Airworthiness Directive (AD) to have more than 15 years TIS.

This AD is not applicable to aircraft that:

- (a) are over 5700 kg MTOW; or
- (b) have in their approved scheduled maintenance tasks, detailed inspections on cable terminal fittings that are at least equivalent to Requirement 1 of this AD.

Note 1: *Primary Flight Control means: For control of the aircraft around the pitch, roll and yaw axis. This AD is not applicable to 'secondary' flight controls such as trim cable or flap cable assemblies.*

Compliance:

As indicated below.

Requirement:

Part 1 – Initial Detailed Visual Inspection:

- A. After the effective date of this AD and before 01st November 2018, inspect cable terminal fittings for cables with 15 years or more time in service (TIS), or unknown TIS at the effective date of this AD as follows:

- (i) Remove rubber sleeves, tape or any covering on the stainless steel swaged terminals to prepare each cable terminal for inspection (see Note 2).
 - (ii) Clean the surface of the terminal fittings as necessary to remove any contaminants on the surface prior to their inspection.
 - (iii) Once the cable terminals are prepared, examine the entire exposed surface of each cable terminal fitting using a 10X magnifier or borescope, looking for any corrosion, pitting or cracking on the terminal fitting.
- B.** If any evidence of pitting corrosion, or cracking on the cable terminal fitting is found during the inspection in (A) above, replace the affected cable assembly before further flight.
- C.** Report to CASA PNG any defects found during compliance with this AD via the Defect Reporting System within two working days of the discovery of the defect.

Note 2: *Removal of lock-wire/safety clips may be required to perform the detailed inspection adequately. Certain methods of locking such as lock-wire which is wrapped (spiral) around the terminal should be removed. The requirement for the disassembly of the turnbuckle is at the discretion of the maintainer.*

Note 3: *Additional guidance, background and references are provided in CASA PNG Service Alert Bulletin (SAB) No. 02/2016.*

Part 2 – Repetitive Detailed Visual Inspection:

- A.** Subsequently, repeat the actions specified in Part 1 (A) at intervals not to exceed 12 months (see Note 4).
- B.** If any evidence of pitting corrosion, or cracking on the cable terminal fitting is found during the inspection, replace the affected cable assembly before further flight.
- C.** Report to CASA PNG any defects found during compliance with this AD via the Defect Reporting System within two working days of the discovery of the defect.

Note 4: *Where the existing manufacturer's maintenance schedule has a cable inspection interval that is different from 12 months, this interval is acceptable for compliance with this AD providing that the detailed inspection task is considered to be the equivalent to the requirements of this AD.*

Note 5: *Where a cable assembly has been previously replaced and with a logbook entry documenting the replacement, this relieves the repetitive inspection of this AD, for that cable only, until such time as that cable assembly has been in service for 15 years.*

This AD is effective from 01st December 2017.

Background:

Following multiple reported cases of cable terminal failures in Australia and overseas, CASA Australia undertook industry consultation via Notice of Proposed Rule Making (NPRM) 1303 MS Proposed Airworthiness Directive to Mandate Inspection or Retirement of Control Cable Assemblies with Terminals Manufactured from SAE – AISI 303 Se Stainless Steel in 2014.

As a result of industry feedback received in response to NPRM 1303 MS, CASA Australia issued AD/GENERAL/87 Primary Flight Control Cable Assembly Retirement mandating retirement of control cable assemblies manufactured with terminal fittings made from SAE-AISI 303 Se Stainless Steel with 15 years or more TIS before 1 January 2018. Consequently CASA PNG issued AD-2016-01 to mandate this requirement for its operators in PNG based on CASA Australia's industry consultation and feedback.

Subsequent input from industry as a result of the release of AD/GENERAL/87, as well as additional investigation and risk analysis undertaken by CASA Australia, resulted in CASA Australia issuing AD/GENERAL/87 Amdt 1 Primary Flight Control Cable Terminals - Detailed Visual Inspections on 29 September 2017.

This has further prompted CASA PNG to revise AD-2016-01 to revision 1 to provide the rationale for enhanced inspection of primary flight control cables rather than mandatory retirement life, offering an acceptable level of safety at a lower material cost to industry. This AD now requires a thorough inspection of the cable terminal fittings that have more than 15 years TIS.



A blue ink handwritten signature, appearing to read "Wilson Sagati", is written over a horizontal dotted line.

Wilson Sagati, OBE

CEO and Director of Civil Aviation