



AS355/550 Tail Rotor Pitch Link
Inspections

AWB 27-010 **Issue :** 1
Date : 10 October 2008

1. Applicability

All AS355 and 550 Series helicopters.

2. Purpose

To remind operators, pilots and maintainers of the requirement detailed in the Daily Inspections (including the After Last Flight (ALF) inspection) to frequently check for tail rotor pitch link wear.

3. Background

An AS350 BA helicopter recently suffered a catastrophic in-flight failure of one tail rotor pitch link rod end. The uncontrolled tail rotor blade tip cut a large hole in the tail boom, from which point rapid cracking progressed around the circumference of the tail boom, apparently being driven by the high energy level of the destructive lateral vibration generated by the uncontrolled tail rotor blade. A safe forced landing was made. It is estimated that the tail boom was seconds away from total separation. The event, starting from a slight vibration in the pedals at cruise at 1500 feet AGL to destructive vibration and forced landing, was estimated to have lasted no longer than a few minutes. The AS355/550 series helicopters share the same part number (P/N) tail rotor pitch control link.

The investigation so far has found that rapid wear or disintegration of the Teflon bearing material in the rod end allowed metal to metal contact between the ball and the bearing outer housing, causing extremely rapid wear, shock loading and rod end failure. This failure mechanism is described in Eurocopter Lettre Service (SL) No 1367-64-98. An investigation into the root cause of the unusual wear of the Teflon bearing material in this case is continuing.

4. Recommendation

CASA strongly recommends that:

- a) when conducting the Daily Inspections accordance with the Rotorcraft Flight Manual at Section 1.3 Station 4 Figure 3, pay particular attention to the tail rotor pitch link swivel bearing to check for play
- b) if any play is found in the tail rotor pitch link swivel bearing, refer to the Maintenance Manual requirements at Chapter 65.20.00.601 Para 4.2. and Eurocopter Lettre Service (LS) No 1367-64-98.
- c) whenever abnormal vibration is felt in the pedals - land as soon as possible.

5. 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

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