

Continuing Airworthiness Notice – 65-001



MD369 Helicopters - Tail Rotor Gearbox (TRG) Duplex Bearing Distress

23 August 2024

Issued by the Civil Aviation Authority of New Zealand (CAA) in the interests of aviation safety. A Continuing Airworthiness Notice (CAN) is intended to alert, educate, and make recommendations to the aviation community. A CAN contains information and guidance about an airworthiness concern that does not meet the criteria for an Airworthiness Directive (AD). The inspections and practices described in this CAN must still be carried out in accordance with the applicable NZCAR Parts 21, 43 and 91.

CAN numbering is by ATA Chapter followed by a sequential number for the next CAN in that ATA Chapter.

Applicability:

All MD369 series helicopter operators and maintenance providers.

Purpose:

The purpose of this CAN is to notify MD369 helicopters operators and maintenance providers of occurrences recently reported to CAA of finding duplex bearing distress in numerous MD369 Tail Rotor Gearboxes (TRG).

Background:

Significant TRG duplex bearing distress has been identified in a number of MD369 TRGs during service.

In one report the TRG was returned to the overhaul facility twice for repair. This TRG was installed on the helicopter for a short period of time in each case.

Whilst these defects were identified following activation of the chip detector system in three instances, in one case CAA understands that the chip detector did not activate. The pilot reported a 'ticking' sensation through the control pedals. A subsequent inspection confirmed TRG duplex bearing distress.

In all cases, an initial field investigation identified significant amounts of metal on the magnetic chip detector. (Refer to Figure 1 below).

Further investigation (i.e. a shop visit) identified significant damage to the TRG, originating from the duplex bearing. (Refer to Figure 2 below).

CAA understands that the flight time following the chip detector activation was very short, indicating that the bearing has the potential to degrade extremely quickly in operation.

CAA are advised that a possible early indication of bearing distress is a darkening in the TRG oil colour.

Recommendation:

Operators are advised to treat any chip detector activation as legitimate.

CAA requests MD369 helicopter operators and maintenance providers to report any TRG distress to CAA at the earliest opportunity. Please report findings to CAA by completing a CA005 Defect Report form.

The form can be obtained from: https://www.aviation.govt.nz/assets/forms/CA005D_Form.pdf

The completed form can be emailed to the CAA at: ca005@caa.govt.nz

Any questions can be directed to: warren.hadfield@caa.govt.nz

Conclusion:

CAA will continue to liaise with the manufacturer and overhaul providers on this matter.



Figure 1 - Magnetic chip detector from damaged TRG.



Figure 2 - Damaged duplex bearing.