

Continuing Airworthiness Notice – 28-009



AS350 Resistance Type Fuel Quantity Indication System (FQIS)

26 September 2012

Issued by the Civil Aviation Authority of New Zealand 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 non-regulatory information and guidance 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 AS350 series helicopters fitted with a resistance type Fuel Quantity Indication System (FQIS).

Purpose:

This Continuing Airworthiness Notice (CAN) is prompted by a recent non-fatal Aerospatiale AS 350B accident in New Zealand. The helicopter was substantially damaged in a rollover type event after a loss of engine power due to fuel exhaustion.

Background:

Investigation of the FQIS revealed the fuel quantity gauge was erroneously reading 20% due to contamination of the fuel quantity transmitter unit magnetic coupling with debris. The fuel quantity transmitter unit was the resistance type which has an integral switch used to activate the low-level warning light. With no signal from the contaminated transmitter the low-level warning light did not illuminate.

Eurocopter/Aerospatiale previously issued Service Letter No 867-28-88 revision 0, dated 31 March 1988, Service Letter No 1190-28-93 revision 0, dated 12 October 1993 and SB 28.00.12 revision 1, dated 26 May 1994 to remind operators of helicopter fuel management requirements and introduce an improved capacitance type FQIS.

Eurocopter AS350 SB No 28.00.12 revision 1 also announced a FQIS modification to introduce a low level fuel warning independent of the fuel quantity measurement transmitter, and to overcome the inherent unreliability of the resistance type FQIS transmitters. This modification provides information redundancy and is of particular significance to operators that allow their helicopters to be flown with low fuel levels.

Recommendation:

Since the accident, the CAA became aware that there may be AS350 operators who are not aware that the low-level warning light on the resistance type FQIS is not independent of the fuel quantity measurement. Furthermore, the AS350 Flight Manual does not clearly show that the low-level warning is integral with the fuel quantity transmitter in the resistance type FQIS.

The CAA recommends operators/maintainers of AS350 series helicopters with the resistance type FQIS review the requirements in SB No 28.00.12 and embody the improved capacitance FQIS which provides a low level fuel warning independent of the fuel quantity measurement.

Copies of Eurocopter/Aerospatiale SL No 867-28-88, SL No 1190-28-93 and SB 28.00.12 can be obtained from Eurocopter at http://www.eurocopter.com/techpub/FO/scripts/myFO_accueil.php

Note: This accident is a timely reminder that operators need to review all service information published by the manufacturer and action according to their type of operation, maintenance options, whether the instructions for continued airworthiness are affected, the type certificate is affected or whether it forms part of the maintenance schedule – CAN 05-002 refers.

Enquiries:

All other enquires regarding this CAN should be made to:

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