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MODELS AFFECTED: 407

SUBJECT: ALLISON 250-C47B ENGINE FADEC, NEW CONFIGURATION, INTRODUCTION OF.

HELICOPTERS AFFECTED: 407, Serial Numbers 53000 through 53166 that are fitted with engines that have the engine overspeed protection deactivated in accordance with Federal Aviation Administration (FAA) Airworthiness Directive (AD) 96-24-09, effective Nov. 25, 1996.

[Serial Number 53167 and subsequent will have the intent of this bulletin completed before delivery.]

COMPLIANCE: As specified in CEB A-73-6015, for Part 1.

DESCRIPTION: To make the 407 engine FADEC better, the Allison Engine Company has made a modification to the engine overspeed protection system. The modification introduces a new NP overspeed trip point established at 118.5% NP. The NG overspeed trip point is unchanged at 110% NG. Additionally, a minimum fuel flow to the engine, when the FADEC detects an overspeed, makes it possible for the engine to stay in operation and come back after the overspeed system has reset. Accomplishment is required as specified in the attached Allison CEB A-73-6015.

This Alert Service Bulletin supersedes ASB 407-96-5 (sent to disconnect the overspeed protection function of the engine FADEC).

This Alert Service Bulletin also requires Flight Manual BHT-407-FM-1, Revision 5 dated June 24, 1997 and the Manufacturers Data BHT-407-MD-1, Rev 2 dated June 24, 1997.

APPROVAL:

The approval of the engineering design aspects of this bulletin are addressed in FAA letter I97-AW-048, dated July 9, 1997 as an alternative method of compliance (AMOC) to Airworthiness Directive (AD) 96-24-09.

MANPOWER:

Approximately 5.0 man-hours are necessary to complete this Bulletin. The man-hours are based on hands-on time and can change due to the personnel and facilities available.

MATERIAL:

Not applicable.

SPECIAL TOOLS:

Not applicable.

WEIGHT AND BALANCE:

Not affected.

ELECTRICAL LOAD DATA:

Not affected.

REFERENCES:

BHT-407-MM-1, Maintenance Manual.

BHT-407-FM-1 and BHT-407-MD-1 Flight Manual.

Allison Commercial Engine Bulletin CEB-73-6015.

REFERENCES (CONT.):

Allison C47B Operation and Maintenance Manual, CSP 21001.

PUBLICATIONS AFFECTED:

ASB 407-96-5.

BHT-407-FM-1 and BHT-407-MD-1 Flight Manual.

ACCOMPLISHMENT INSTRUCTIONS:

1. Connect the Overspeed Test switch (disconnected per ASB 407-96-5) as follows:
 - a. Remove the decal 407-799-016-115, OVSPD SYSTEM INOP. from the instrument panel.
 - b. Remove the end cap from the wire E44B22. Install the wire to connector 10J1, at position q, with finger pressure.
2. Remove the transmission and engine fairings to get access to the engine Electronic Control Unit (ECU) and Hydromechanical Unit (HMU) (Refer to BHT-407-MM, Chapter 53).
3. Do the tasks as specified in the Allison CEB A-73-6015.
4. Do the Check Run procedure and Operational Check as specified in the Allison CEB A-73-6015.
5. Include BHT-407-FM-1, Rev 5 dated 24 June, 1997 in the Flight Manual. BHT-407-FM-1, Rev 5 replaces temporary revision 1, dated 03 December 1996 "Temporary Revision For FADEC FAULT ANNUNCIATION INTERPRETATION" and temporary revision 3, dated 03 December 1996 "Temporary Revision for NP OVERSPEED TRIP INCREASE".
6. Include BHT-407-MD-1, Rev 2 dated 24 June, 1997 in the Flight Manual Manufacturer's Data section. BHT-407-MD-1, Rev 2 gives an operational description of the minimum fuel flow overspeed system.
7. Install all fairings removed in step 2 (Refer to BHT-407-MM, Chapter 53). Prepare the helicopter for flight.
8. Make an entry in the helicopter historical records to show that this Alert Service Bulletin is completed.

- NOTE -

The reason for this bulletin is to make the engine FADEC the same for all 407 helicopters.

The result that you get is the same if you do ASB 407-97-8 or ASB 407-97-9.

9. Make an entry in the Record of Alert Service Bulletins in the Maintenance Manual.
10. Make an entry in the component service record cards. Send the component service record cards along with the removed ECU and HMU to the Allison Engine Company.