



AIRWORTHINESS DIRECTIVE

This Airworthiness Directive (AD) is issued pursuant to Canadian Aviation Regulation (CAR) 521.427. No person shall conduct a take-off or permit a take-off to be conducted in an aircraft that is in their legal custody and control, unless the requirements of CAR 605.84 pertaining to ADs are met. Standard 625 - Aircraft Equipment and Maintenance Standards Appendix H provides information concerning alternative means of compliance (AMOC) with ADs.

Number:

CF-2023-16R1

Effective Date:

2 August 2023

ATA:

73

Type Certificate:

H-112

Subject:

Engine – Fuel and Control – Change of Flight Manual Limitations

Revision:

Supersedes AD CF-2023-16, issued 6 March 2023

Applicability:

Bell Textron Canada Limited (Bell) model 505 helicopters, serial numbers 65011 through 65169 and 65171 through 65300.

Compliance:

Within 30 days from the effective date of this AD, unless already accomplished.

Background:

In 2019, Bell determined that the altitude limitations in the original Rotorcraft Flight Manual (RFM), as they pertain to certain types of fuel, were not valid. Bell revised the RFM to reflect the correct operating limitations. The update to the RFM at Revision 3 was mandated by Transport Canada AD CF-2019-08.

Bell required an update to the RFM BHT-505-FM-1 at Revision 5 to align with the limitations of the ARRIUS 2R engine, which included more stringent fuel operating envelope limitations for starting at certain altitudes, ambient temperatures and fuel specifications.

Failure to comply with the correct operating limitations could result in low fuel pressure, engine flame-out or engine power interruption. Engine power interruption is defined as a change in any engine performance parameter (e.g., gas generator speed, power turbine speed, main gas temperature, output torque) outside its normal limits for the prevailing operating conditions.

AD CF-2023-16 was issued to mandate the update of RFM BHT-505-FM-1. After that AD was issued, Transport Canada became aware that Bell 505 helicopters with Garmin G1000H NXi Avionics Suite use a different RFM BHT-505-FM-2, and those helicopter serial numbers were included in the applicability of AD CF-2023-16. As a result, they were not able to comply with the requirements of AD CF-2023-16.

Review of BHT-505-FM-2 showed that Bell has incorporated in the initial release of that RFM the updated fuel operating envelope found in Figure 1-6 of BHT-505-FM-1 Revision 5. The BHT-505-FM-1 effectivity covers Bell 505 serial number 65011 through 65169 and 65171 through 65300 while BHT-505-FM-2 covers serial number 65170 and 65301 and subsequent.

This AD, CF-2023-16R1, is issued to correct the applicability of the AD to exclude Bell 505 helicopters that use RFM BHT-505-FM-2.

Corrective Actions:

Update the RFM BHT-505-FM-1, to Revision 5, or to later revisions approved by Transport Canada.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Jenny Young
Chief, Continuing Airworthiness
Issued on 19 July 2023

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