AIRWORTHINESS DIRECTIVE

On the effective date specified below, and for the reasons set out in the background section, the CASA delegate whose signature appears below revokes Airworthiness Directive (AD) AD/BELL 407/25 and issues the following AD under subregulation 39.1 (1) of CASR 1998. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct the unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

Bell Helicopter Textron Canada (BHTC) 407 Series Helicopters

AD/BELL 407/25 Amdt 1 — Tail Rotor Drive Shaft Bearings — 11/2004 DM

Applicability: Bell Helicopter Textron Canada (BHTC) Model 407 helicopters.

Requirement:

1. **Revised Flight Limitations:**

   For helicopters serial number (S/N) 53000 through 53518:

   a. Install oil cooler blower inlet ducts and bearing airflow shields in accordance with Bell Helicopter Textron Canada (BHTC) Alert Service Bulletin (ASB) 407-02-54 Revision A or later and;

   b. Incorporate temporary revision (TR-10) Revision 1 into Flight Manual BHT-407-FM-1.

2. **Oil Cooler Blower Shaft Bearings:**

   For helicopters S/N 53000 through 53579:

   a. Replace oil cooler blower shaft bearings in accordance with BHTC ASB 407-04-63 Revision A.

   b. Inspect oil cooler blower shaft bearings in accordance with BHT ASB 407-04-63 Revision A.

   c. Lubricate oil cooler blower shaft bearings in accordance with BHTC ASB 407-04-63 Revision A.

   d. Replace lubrication-warning decal in accordance with BHTC ASB 407-04-63 Revision A.

3. **Tail Rotor Segmented Drive Shaft Bearings:**

   a. Replace oil cooler blower shaft bearings in accordance with BHTC ASB 407-04-63 Revision A.

   b. Inspect tail rotor drive shaft bearings in accordance with BHTC ASB 407-04-63 Revision A.

Bell Helicopter Textron Canada (BHTC) 407 Series Helicopters

AD/BELL 407/25 Amdt 1 (continued)

c. Lubricate bearings in accordance with BHTC ASB 407-04-63 Revision A.

d. Replace lubrication-warning decal in accordance with BHTC ASB 407-04-63 Revision A.

Note 1: Canadian AD CF- 2002-18 R3 refers.

Compliance: **Requirement 1. Revised Flight Limitations:**

Remains unchanged as detailed in the original issue of this Directive as unless previously accomplished, prior to 30 June 2004.

Requirement 2. Oil Cooler Blower Shaft Bearings:

a. Unless previously accomplished, within 300 flight hours from the effective date of this Directive or no later than 30 September 2004, whichever comes first.

b. Effective 30 September 2004; as detailed in Table 1 of BHTC ASB 407-04-63 Revision A.

c. Effective 30 September 2004; as detailed in Table 2 of BHTC ASB 407-04-63 Revision A.

d. Effective 30 September 2004; as detailed in Table 2 of BHTC ASB 407-04-63 Revision A.

Requirement 3: Tail Rotor Segmented Drive Shaft Bearings:

a. Unless previously accomplished, within 200 flight hours from the effective date of this Directive or no later than 30 September 2004, whichever comes first and as detailed in Table 1 of BHTC ASB 407-04-63 Revision A.

b. Effective 30 September 2004; as detailed in Table 2 of BHTC ASB 407-04-63 Revision A.

c. Effective 30 September 2004; as detailed in Table 2 of BHTC ASB 407-04-63 Revision A.

d. Effective 30 September 2004; as detailed in Table 2 of BHTC ASB 407-04-63 Revision A.

This Amendment becomes effective on 15 September 2004.

Bell Helicopter Textron Canada (BHTC) 407 Series Helicopters

AD/BELL 407/25 Amdt 1 (continued)

Background: This Directive was issued in response to reports of the tail rotor drive and oil cooler blower bearing failures in Bell 407 helicopters. In certain operating conditions, hot exhaust gases can be ingested into the aft fairing area resulting in high temperatures in the tail rotor drive bearing zones. In addition to this, a differential pressure across these bearings was extruding the grease from the bearings. This can lead to failure of the tail rotor drive bearings and possible loss of control of the helicopter.

This amendment has been issued to mandate the installation of oil cooler airflow modifications and to reflect the release of further amendments to the requirement documents. Previous amendments, in part, introduced an additional replacement bearing P/N 407-340-339-107. This amendment requires the replacement of P/N 407-430-339-101 and -103 bearings at all tail rotor hanger bearing locations, including the oil cooler blower locations, and the installation of a revised lubrication decal.

The original issue of this Airworthiness Directive became effective on 3 October 2002 and superseded AD/BELL 407/21 Amdt 2.

James Coyne
Delegate of the Civil Aviation Safety Authority

10 September 2004

The above AD is notified in the *Commonwealth of Australia Gazette* on 15 September 2004.