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) to ADs.

Number:

CF-2019-34

Effective Date:

9 October 2019

ATA:

65

Type Certificate:

H-92

Subject:

Tail Rotor Drive – Failure of tail rotor drive shaft coupling bolted connections

Applicability:

Bell Helicopter Textron Canada Limited (BHTCL) model 206, 206A, 206A-1, 206B, 206B-1, 206L, 206L-1, 206L-3 and 206L-4 helicopters, all serial numbers.

Compliance:

As indicated below, unless already accomplished.

Background:

Bell and Transport Canada have received reports of cracked or missing MS21042-series nuts. Conditions that can lead to cracked or missing MS21042 nuts include improper installation torque, loss of self-locking characteristics and hydrogen embrittlement. Several of these occurrences involved the bolted connections at the tail rotor drive shaft disc pack (Thomas) couplings. Failure of any one of these bolted connections will result in loss of tail rotor drive and probable loss of control of the helicopter.

To reduce the probability of nuts at the tail rotor drive shaft Thomas couplings failing to perform their function, BHTCL has published Alert Service Bulletins (ASBs) 206-19-136 and 206L-19-181. The first ASB is applicable to the 206/206A/206B family of helicopters. The second ASB is applicable to the 206L/206L-1/206L-3/206L-4 family of helicopters. These ASBs provide instructions to replace the MS21042-series nuts with NAS9926-series nuts. The NAS9926 nuts are much less vulnerable to failure from hydrogen embrittlement than MS21042 nuts.

NAS9926-series nuts are a relatively new design. For that reason they are not widely available from distributors of aerospace hardware and are not kept in stock at many maintenance organizations. This AD does not permit de-modification of a helicopter once that helicopter has been modified by installing NAS9926 nuts. For that reason, it is suggested that operators and maintenance organizations that support helicopters affected by this AD, take steps to acquire sufficient inventory of the NAS9926 nuts to satisfy the demand that will arise during ongoing maintenance of the helicopters.

Corrective Actions:

A. Within 600 hours air time or 24 months, whichever occurs first, from the effective date of this AD, replace the MS21042 nuts of the tail rotor drive (Thomas) couplings with NAS9926 nuts. BHTCL ASBs 206-19-136 and 206L-19-181, Basic Issue, both dated 27 August 2019, provide approved instructions for replacement of the nuts and related maintenance actions.

B. From the date that ASB 206-19-136 or ASB 206L-19-181, as applicable, is implemented on a helicopter or within 24 months from the effective date of this AD, whichever occurs first, MS21042-series nuts are not eligible for installation at the tail rotor drive shaft disc pack (Thomas) couplings.

Later revisions of these ASBs approved by the Chief, Continuing Airworthiness, Transport Canada, are acceptable for compliance with the requirements of this AD.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Rémy Knoerr
Chief, Continuing Airworthiness
Issued on 25 September 2019

Contact:

Ross McGowan, Continuing Airworthiness, Ottawa, telephone 888-663-3639, facsimile 613-996-9178 or e-mail AD-CN@tc.gc.ca or any Transport Canada Centre.