EASA Safety Information Bulletin

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Subject: **Loss of tail rotor effectiveness (LTE) or unanticipated yaw in helicopters**

Ref. Publication:

[1] FAA-H-8083-21 Rotorcraft Flying Handbook.
http://www.faa.gov/library/manuals/aircraft/media/faa-h-8083-21.pdf
[2] FAA - AC No: 90-95 Unanticipated right Yaw in Helicopters Date: 12/26/95.
http://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/23136
[3] UK CAA - CAP 768 - Guidance Material for Operators, Chap 21 - Miscellaneous Provisions Affecting helicopters Operations.
http://www.caa.co.uk/docs/33/CAP%20768.pdf

Description:

Loss of Tail rotor Effectiveness (LTE) has been determined to be a contributing factor in a number of accidents of various models of helicopters. Recently several helicopter reported accidents or incidents emphasize the phenomenon of loss of yaw control.

LTE or unanticipated yaw results from lack of yaw margin encountered in certain flight conditions is not related to a failure or malfunction. LTE is a critical, low-speed aerodynamic flight condition that could affect all single main rotor helicopters equipped with a tail anti-torque device. The uncommanded yaw occurs to the right in helicopters with a counter clockwise rotating main rotor and to the left in helicopters with a clockwise rotating main rotor.

The conditions under which LTE may be encountered and how it can be prevented are detailed in [1] and [3]. Actions to prevent the onset of LTE and recommended recovery techniques are also explained in [2].

Recommendation:

In order to understand the LTE phenomenon, theoretical and flight training of pilots should emphasise the characteristics and function of the anti torque system. In particular, emphasis should be placed on those flight regimes where combinations of various elements (e.g. relative wind vector, yaw rate, etc.) could lead to a potential LTE situation. Pilots should be able to recognise the possibility of experiencing LTE, its onset and be prepared to recover.

Pilots should be aware of the characteristics of the different models of helicopter flown and, in particular, the yaw pedal input typically required for different flight conditions.

The theoretical and flight training should be conducted by approved training organisations and instructors having appropriate experience and knowledge of this phenomenon.

The Agency further recommends to NAA's to ensure that any PPL(H), CPL(H), ATPL(H) and Flight Instructor training courses include sufficient and dedicated training on LTE and recovery actions.

Applicability: All single main rotor helicopters equipped with a tail anti-torque device.

Contact: For further information contact the Airworthiness Directives, Safety Management & Research Section, Certification Directorate, EASA.
E-mail: ADs@easa.europa.eu.