



**Airworthiness
Directive
1999-300/3**

Luftfahrt-Bundesamt
Airworthiness Directive Section
Hermann-Blenk-Str. 26
38108 Braunschweig
Federal Republic of Germany

Eurocopter Deutschland

Effective Date: August 31, 1999

Affected:

Kind of aeronautical product: Helicopter
Manufacturer: Eurocopter Deutschland, München, Germany
Type: BO 105
Models affected: all BO 105

with exception of (see also Airworthiness Directive Number 1999-289 dated August 11, 1999):

BO 105 C
- Variant: BO 105 CB-5

BO 105 S
- Variant: BO 105 CBS-5
- Variant: BO 105 DBS-5

Serial numbers affected: All
German Type Certificate No.: 3025

Subject:

Main Rotor System – Inspection and Replacement of Tension-Torsion-Strap

Affected components:

Main Rotor Head: P/N 105-141081 and 105-14104
Tension-Torsion Strap: P/N 2604067 and J17322-1

Reason:

The reason for this Airworthiness Directive was a main rotor blade separation with total loss of the helicopter in the USA on July this year.

The cause of the blade separation was a tension-torsion strap rupture in the main rotor head. The investigation is still going on but the reason for the rupture is presently not fully cleared up.

Depending on inspection results of tension-torsion straps in service, further instructions will be given by the national authority. At present time the following actions must be performed in order to prevent further blade failures in flight.

Reason for the revision of this AD: This AD specifies the Compliance more precisely in order to prevent misunderstanding and unites criterions determinating a replacement of the tension-torsion strap in part 2.B. "Work-Procedure" of the Alert Service Bulletin (ASB).

Action / Compliance:

Before next flight: find out the total time of installation and the total number of flights completed by the tension-torsion straps up to now and replace or inspect them.

Note:

If the number of flights is unknown, carry out the following conversion to service life: 5 flights correspond to 1 flight hour.

If the tension-torsion straps have previously been used in helicopters BO 105 CB-5, BO 105 CBS-5, BO 105 DBS-5 or BO 105 LS A-3 „SUPER LIFTER“, their previous number of flights must be multiplied by a conversion factor 1,6. The resulting new number of flights must be added to the number of flights that the tension-torsion straps has accumulated in the affected helicopter.

1. Tension-torsion straps which have exceeded a total of 18 years installation time in the helicopter or have completed 40,000 flights, must be replaced immediately. However, a maximum of 5 flights are permitted for transfer to the service station for replacement of the tension-torsion straps (see also the diagram area 4 of the ASB).
2. For tension-torsion straps with an installed service time of 10 or more years and an accumulated number of flights of 40,000 or less and for tension-torsion straps with an installed service time of 15 or more years and an accumulated number of flights of less than 16,000 flights (linear reduction of the permitted number of flights by 4,800 per year; see diagram area 2 of the ASB) must be inspected in accordance with the Alert Service Bulletin dependent upon the installation times listed below
 - Installation time accumulated 10 to 11 years: Inspection within the next 6 weeks
 - Installation time accumulated 11 to 12 years: Inspection within the next 5 weeks
 - Installation time accumulated 12 to 13 years: Inspection within the next 4 weeks
 - Installation time accumulated 13 to 14 years: Inspection within the next 3 weeks
 - Installation time accumulated 14 to 15 years: Inspection within the next 2 weeks
3. Tension-torsion-straps having accumulated between 10 and 18 years installation time and having completed less than 40,000 flights but more than the permissible number of flights (see part 2. of this AD and also the diagram-area 3) are to be inspected immediately in accordance with the ASB. A maximum of 5 additional flights are permitted for transfer to the service station for the inspection.
4. Tension-torsion-straps which have been inspected in accordance with part 2. and 3. of this AD, and by which no defects have been found, can be used for a maximum of 1000 further flights or for 1 further year, whichever occurs first, from the time of this inspection and must then be replaced. The permitted total number of flights and/or the permitted total number of years installation time (see part 1.) shall not be exceeded.
5. Until the announcement of any otherwise measures, tension-torsion straps are to be replaced every 10 years (after installation into the helicopter) or every 40,000 flights, whichever occurs first, following their first replacement in accordance with the Alert Service Bulletin.

Technical publication of the manufacturer:

Eurocopter Deutschland Alert Service Bulletin BO 105 No. ASB-BO 105-10-114 Revision 2 dated August 31, 1999 which becomes herewith part of this AD and must be obtained from Messrs.:

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Accomplishment and log book entry:

Action to be accomplished by an approved service station and to be checked and entered in the log book by a licensed inspector.

Note:

This AD supersedes the AD-No. 1999-300/2 dated August 31, 1999.

Holders of affected aircraft registered in Germany have to observe the following:

As a result of the a.m. deficiencies, the airworthiness of the aircraft is affected to such an extent that after the expiry of the a.m. dates the aircraft may be operated only after proper accomplishment of the prescribed actions. In the interest of aviation safety outweighing the interest of the receiver in a postponement of the prescribed actions, the immediate compliance with this AD is to be directed

Instructions about Available Legal Remedies:

An appeal to this notice may be raised within a period of one month following notification. Appeals must be submitted in writing or registered at the Luftfahrt-Bundesamt, Hermann-Blenk-Str. 26, 38108 Braunschweig.