| EASA | AIRWORTHINESS DIRECTIVE |
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| | **AD No.: 2009-0247**<br><br>**Date: 13 November 2009**<br><br>Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EC) No 216/2008 on behalf of the European Community, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation. |

This AD is issued in accordance with EC 1702/2003, Part 21A.3B. In accordance with EC 2042/2003 Annex I, Part M.A.301, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD unless otherwise specified by the Agency [EC 2042/2003 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [EC 216/2008, Article 14(4) exemption].

| **Type Approval Holder's Name :** | **Type/Model designation(s) :** |
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| EUROCOPTER | SA 365, AS 365, SA 366 and EC 155 helicopters |

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| TCDS Number : | DGAC France No. 159 |
| Foreign AD : | Not Applicable |
| Supersedure: | This AD supersedes EASA AD 2008-0147-E dated 05 August 2008. |
| **ATA 05, 65** | **Time Limits / Maintenance Checks, Tail Rotor Drive - Tail Gearbox (TGB) Oil Level and Tail Rotor Pitch Control Rod Bearing - Inspection** |
| Manufacturer(s): | Eurocopter (formerly Eurocopter France, Aerospatiale). |
| Applicability: | SA 365 N1, AS 365 N2, AS 365 N3, SA 366 G1, EC 155 B and EC 155 B1 helicopters, all serial numbers. |
| Reason: | In early 2006, a report was received concerning the loss of the tail rotor pitch control on a helicopter during a landing phase. Investigation showed that this loss of pitch control was due to significant damage to the bearing of the control rod in the tail gearbox (TGB). The loss of tail rotor pitch control can lead to the loss of yaw control of the helicopter.<br><br>On February 2006, EASA issued Emergency AD 2006-0051-E to address this unsafe condition, which was subsequently superseded by Emergency AD 2006-0258R1-E dated 29 August 2006. That AD required the affected operators to maintain the TGB oil level at the maximum and to check the axial play in the tail rotor pitch control rod bearing, each time metallic particles were detected at the TGB magnetic plug.<br><br>Since AD 2006-0258 R1-E was issued, another AS 365 N3 helicopter has experienced loss of yaw control due to deterioration of the control rod bearing, with a damage mode similar to the previous case. Following the investigation on this event, Eurocopter has determined that a repetitive check for absence of axial play in the pitch control rod bearing is necessary to ensure safety of flight and a new procedure has been developed and published in revised Alert Service Bulletins (ASB) AS365 No. 05-00-54, SA366 No. 05-37 and EC155 No. 05A015, respectively. In addition, for SA 365 and AS 365 helicopters only, the interval for checking the TGB oil level has been revised from "after the last flight of the day" (ALF check) to 10 flight hours (FH). |

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| | For the reasons described above, Emergency AD 2008-0147-E , which superseded Emergency AD 2006-0258 R1-E, required the implementation of the additional and revised inspection and corrective actions as described in the above service bulletins.<br><br>Following two new cases of loss of yaw control efficiency during the landing phase without loosing the aircraft control, Eurocopter has modified the procedure for checking play in the control rod bearing.<br><br>The maintenance history of these TGBs showed that, in spite of compliance with ASB AS365 No. 05.00.54 at Revision (Rev.) 1 or Rev. 2; SA366 No. 05-37 at Rev. 1 or Rev. 2; EC155 No. 05A015 at Rev. 1 or Rev. 2, no play had been detected before the incident.<br><br>For the reasons described above, this AD retains the requirements of EASA AD 2008-0147-E, which is superseded, and additionally requires accomplishment of the new procedure to control play of the rod bearing, in accordance with the instructions of paragraph 2.B.3 of the applicable ASB at Revision 3. |
| Effective Date: | 27 November 2009 |
| Required action(s) and Compliance Time(s): | Required as indicated, unless accomplished previously:<br><br>(1) **For SA 365 N1, AS 365 N2 and AS 365 N3 helicopters**:<br><br>Within 10 FH after 05 August 2008 (effective date of EASA AD 2008-0147-E), and thereafter at intervals not to exceed 10 FH, check the oil level in accordance with the instructions of paragraph 2.B.1 of Eurocopter ASB AS365 No. 05.00.54 Rev. 1, 2 or 3 and accomplish the associated corrective actions.<br><br>**For SA 366 G1, EC 155 B and EC 155 B1 helicopters**:<br><br>After 05 August 2008 (the effective date of EASA AD 2008-0147-E), during each ALF check and during each flight-related check (15 FH or 7 days, whichever occurs first), check the oil level in accordance with the instructions of paragraph 2.B.1 of Eurocopter ASB SA366 No. 05.37 or EC155 No. 05A015, at Rev. 1, 2 or 3, as applicable to the helicopter version and accomplish the associated corrective actions.<br><br>(2) For helicopters having accumulated, at the effective date of this AD, less than 60 FH after the last check for play in the double bearing of the TGB control rod/shaft assembly, in compliance with paragraph (2) of EASA AD 2008-0147-E, and for all other helicopters which have not complied with paragraph (2) of EASA AD 2008-0147-E, within 50 FH after the effective date of this AD, and thereafter at intervals not to exceed 110 FH, check for play in the double bearing of the TGB control rod/shaft assembly and accomplish the associated corrective actions, in accordance with the instructions of paragraph 2.B.3 of Eurocopter ASB AS365 No. 05.00.54 Rev. 3, SA366 No. 05.37 Rev. 3 or EC155 No. 05A015 Rev. 3, as applicable to the helicopter version.<br><br>(3) For helicopters having accumulated, at the effective date of this AD, more than 60 FH after the last check for play in the double bearing of the TGB control rod/shaft assembly, in compliance with paragraph (2) of EASA AD 2008-0147-E, before the accumulation of 110 FH after the last check, and thereafter at intervals not to exceed 110 FH, check for play in the double bearing of the TGB control rod/shaft assembly and accomplish the associated corrective actions, in accordance with the instructions of paragraph 2.B.3 of Eurocopter ASB AS365 No. 05.00.54 Rev. 3, SA366 No. 05.37 Rev. 3 or EC155 No. 05A015 Rev. 3, as applicable to the helicopter version. |

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| | (4) If play in the double bearing of the TGB control rod/shaft assembly is detected during any inspection required by paragraph (2) or (3) of this AD, within 10 days after the inspection, report the inspection results to Eurocopter, in accordance with the instructions of paragraph 2.B.3.b) of Eurocopter ASB AS365 No. 05.00.54 Rev. 3, SA366 No. 05.37 Rev. 3 or EC155 No. 05A015 Rev. 3, as applicable to the helicopter version.<br><br>(5) For TGBs not equipped with a magnetic plug with electrical indicating:<br><br>At the next scheduled check of the magnetic plug after 05 August 2008 (effective date of EASA AD 2008-0147-E) and thereafter at intervals not to exceed 25 FH, verify that there are no chips at the magnetic plug, in accordance with the instructions of paragraph 2.B.2 of Eurocopter ASB AS365 No. 05.00.54 Rev. 1, 2 or 3, SA366 No. 05.37 Rev. 1, 2 or 3 or EC155 No. 05A015 Rev. 1, 2 or 3, as applicable to the helicopter version. If chips are detected, before next flight, accomplish the associated corrective actions in accordance with the instructions of paragraph 2.B.2.b) of Eurocopter ASB AS365 No. 05.00.54 Rev. 1, 2 or 3, SA366 No. 05.37 Rev. 1, 2 or 3 or EC155 No. 05A015 Rev. 1, 2 or 3, as applicable to the helicopter version.<br><br>(6) For TGBs equipped with a magnetic plug with electrical indicating:<br><br>At the next scheduled check of the magnetic plug, or after illumination of the TGB “CHIP” warning light, whichever occurs first after 05 August 2008 (effective date of EASA AD 2008-0147-E), and thereafter upon each event of illumination of the TGB “CHIP” warning light, verify that there are no chips at the magnetic plug, in accordance with the instructions of paragraph 2.B.2 of Eurocopter ASB AS365 No. 05.00.54 Rev. 1, 2 or 3, SA366 No. 05.37 Rev. 1, 2 or 3, or EC155 No. 05A015 Rev. 1, 2 or 3, as applicable to the helicopter version. If chips are detected, before next flight, accomplish the associated corrective actions in accordance with the instructions of paragraph 2.B.2.b) of Eurocopter ASB AS365 No. 05.00.54 Rev. 1, 2 or 3, SA366 No. 05.37 Rev. 1, 2 or 3 or EC155 No. 05A015 Rev. 1, 2 or 3, as applicable to the helicopter version.<br><br>(7) Accomplishment of the corrective actions in accordance with paragraph (1), (2), (3), (5) or (6) of this AD does not constitute terminating action for the repetitive inspection requirements of this AD. |
| Ref. Publications: | Eurocopter AS365 ASB No. 05.00.54 Revision 3 dated 09 November 2009;<br>Eurocopter SA366 ASB No. 05.37 Revision 3 dated 09 November 2009;<br>Eurocopter EC155 ASB No. 05A015 Revision 3 dated 09 November 2009.<br><br>The use of later approved revisions of these documents is acceptable for compliance with the requirements of this AD. |
| Remarks: | 1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.<br><br>2. The required actions and the risk allowance have granted the issuance of a Final AD with Request for Comments, postponing the public consultation process after publication.<br><br>3. Enquiries regarding this AD should be referred to the Airworthiness Directives, Safety Management & Research Section, Certification Directorate, EASA. E-mail: ADs@easa.europa.eu.<br><br>4. For any question concerning the technical content of the requirements in this AD, please contact: EUROCOPTER (STDI) - Aéroport de Marseille Provence 13725 Marignane Cedex, France.<br>Telephone +33 (0) 4 42 85 97 97, Fax +33 (0) 4 42 85 99 66.<br>E-mail: Directive.technical-support@eurocopter.com. |