DIVULGAÇÃO OPERACIONAL	Nº 001/2013
CENTRO DE INVESTIGAÇÃO E PREVENÇÃO DE ACIDENTES AERONÁUTICOS	DATA 01/04/2013

O único objetivo das investigações realizadas pelo Sistema de Investigação e Prevenção de Acidentes Aeronáuticos (SIPAER) é a prevenção de futuros acidentes aeronáuticos. De acordo com o Anexo 13 da Organização de Aviação Civil Internacional – OACI, da qual o Brasil é país signatário, o propósito dessa atividade não é determinar culpa ou responsabilidade. Esta Divulgação Operacional, cuja conclusão baseia-se em fatos ou hipóteses, ou na combinação de ambos, objetiva exclusivamente a prevenção de acidentes aeronáuticos. O uso desta divulgação para qualquer outro propósito poderá induzir a interpretações errôneas e trazer efeitos adversos ao SIPAER.

AERONAVE: AS350-B3e	RESPONSÁVEL: CENIPA

ASSUNTO: CUMPRIMENTO DE EMERGENCY AIRWORTHINESS DIRECTIVE

1 – HISTÓRICO

Foram detectadas, recentemente, falhas prematuras dos semimancais laminados (P/N 704A33-633-261), instalados em combinação com pás do rotor de cauda P/N 355A12.0055.00, em helicópteros modelo AS 350 B3e.

Três casos de vibrações provenientes do rotor de cauda, que resultaram em pousos de precaução, estiveram relacionados com vibração associada à falha dos semimancais laminados.

Durante a investigação de um Incidente Grave ocorrido na área de responsabilidade do SERIPA II, no dia 25 JUL 2012, envolvendo uma aeronave daquele modelo, verificou-se a necessidade da emissão da DIVOP 002/2012, que tratava do cumprimento de procedimentos de inspeção nos semimancais laminados, reforçando a necessidade do cumprimento do Safety Information Notice – SIN nº 2482-S-64, de 20 JUL 2012.

Após a publicação dos documentos supracitados, houve um acidente no dia 28 SET 2012, envolvendo um helicóptero modelo AS 350 B3e, segundo informações constantes no Allert Service Bulletin ASB 01-00-65 emitido pela Eurocopter em 04 OUT 2012, no qual o piloto havia sentido fortes vibrações provenientes do rotor de cauda, antes de perder o controle em voo da aeronave.

Antes do acidente em questão, os semimancais laminados do helicóptero haviam sido substituídos por duas vezes, devido à sua deterioração prematura.

2 – ANÁLISE

Como consequência, a Eurocopter publicou o Safety Information Notice – SIN nº 2507-S-64, de 01 OUT 2012, que por sua vez superou a SIN n° 2482-S-64, alertando a todos os operadores das aeronaves modelo AS 350 B3e para o fiel cumprimento do Service Bulletin nº AS350-05.00.71, de 19 SET 2012, com destaque, notadamente, para a atenção especial que deve ser dada durante a verificação dos semimancais laminados do rotor de cauda, após o último voo do dia.

Visando dar tratamento a essa condição insegura, a Eurocopter emitiu o *Emergency Alert Service Bulletin* N° 01.00.65, em 04 OUT 2012, dirigido para as aeronaves do modelo em questão, onde foi estabelecida uma nova tabela reduzindo as velocidades máximas de operação, a fim de diminuir as cargas dinâmicas atuantes sobre o rotor de cauda. O boletim supracitado também reduziu os intervalos de tempo entre as inspeções visuais nos semimancais laminados.

Em consequência, a EASA emitiu a *Emergency Airworthiness Directive* N° 2012-0217-E, em 19/10/2012, que por sua vez superou a *Emergency Airworthiness Directive* N° 2012-0207-E, de 05/10/2012.

A *Emergency Airworthiness Directive* N° 2012-0217-E estabeleceu o caráter mandatório para o cumprimento das *Emergency Alert Service Bulletin* N° 01.00.65, descritas anteriormente e relacionadas aos **limites de velocidade e à redução de intervalos de tempo entre as inspeções.**

Nota 1:

O RBAC 39.5-I estabelece que: "*Para os efeitos deste regulamento, a ANAC considera a Diretriz de Aeronavegabilidade, ou documento equivalente, emitido por Autoridade de Aviação Civil do Estado de Projeto, como uma Diretriz de Aeronavegabilidade emitida pela própria ANAC*".

Nota 2:

A presente DIVOP complementa a DIVOP 002/2012, constante do site do CENIPA, referente ao tema.

3 – Ação Recomendada

Todos os operadores e mantenedores das aeronaves modelo AS 350 B3e *helicopter (version B3 post MOD 07 5601)* devem atentar para o fiel cumprimento da *Emergency Airworthiness Directive* N° 2012-0217-E, de 19/10/2012.

EASA	EMERGENCY AIRWORTHINESS DIRECTIVE
	AD No.: 2012-0217-E Date: 19 October 2012 Note: This Emergency 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 EU 748/2012, Part 21.A.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].

Design Approval Holder's Name:	Type/Model designation(s):
EUROCOPTER	AS 350 B3 helicopters

TCDS Number:	EASA.R.008
Foreign AD:	Not applicable
Supersedure:	This AD supersedes EASA Emergency AD 2012-0207 dated 05 October 2012.

ATA 64	Rotorcraft Flight Manual – Section Limitations – Amendment Tail Rotor – Laminated Half-Bearings – Inspection / Replacement
Manufacturer(s):	Eurocopter (formerly Eurocopter France, Aerospatiale)
Applicability:	AS 350 B3 helicopters, all serial numbers, if modified in production by incorporating Eurocopter modification (MOD) 07 5601. Note: MOD 07 5601 is an integral part of a specific AS 350 B3 model configuration, commercially identified as "AS350B3e" and is not fitted on AS350B3 model helicopters of other configurations.
Reason:	Premature failures of laminated half-bearings Part Number (P/N) 704A33-633-261 (supplier P/N 5791530004), installed in combination with tail rotor blades P/N 355A12.0055.00, have recently been detected on AS 350 B3 helicopters in AS350B3e configuration. Three cases of vibrations originating from the tail rotor were also reported, detected in flight on affected helicopters, following which precautionary landings were performed. The cause of vibration has been identified as failure of the laminated half-bearings. Prompted by these reports, Eurocopter published Safety Information Notice No. 2482-S-64 and Service Bulletin No. AS350-05.00.71 to remind all operators of the particular attention that must be given during the check of the elastomeric part of the laminated half-bearings during the ALF (after last flight of the day) check. After publication of these documents, an accident occurred involving an AS 350 B3 helicopter (in AS350B3e configuration). During the affected flight, the pilot felt strong vibrations originating from the tail rotor before losing control of the helicopter. Although the investigation into this accident is on-going, it has been

	found that, prior to the accident, the laminated half-bearings were twice replaced on this helicopter, due to their deterioration. This condition, if not detected and corrected, could lead to failure of the tail rotor, possibly resulting in loss of control of the helicopter. To address this unsafe condition, Eurocopter issued AS350 Emergency Alert Service Bulletin (ASB) No. 01.00.65 for the affected AS 350 B3 helicopters in this particular configuration. Consequently, EASA issued Emergency AD 2012-0207-E to require changes to the Rotorcraft Flight Manual (RFM), imposing limitations of the flight envelope in order to reduce the dynamic loads on the tail rotor, and a one-time pre-flight inspection, a one-time ALF check inspection (including tail rotor disassembly), and repetitive post-flight inspections of the laminated half-bearings to detect damage and, depending on findings, replacement of all 4 laminated half-bearings. Since that AD was issued, a discrepancy has been found where, under specific altitude and temperature conditions, the new airspeed limitation (defined in True Airspeed – TAS) and the information on one of the two related labels (defined in Indicated Airspeed – IAS) are not compatible. Additionally, Eurocopter has defined a new Engine Health Check (EHC) procedure which is compatible with the new airspeed limitation. To address the discrepancy described above and to publish the new EHC procedure, Eurocopter issued AS350 Emergency ASB No. 01.00.65 revision 1. For the reasons described above, this new AD partially retains the requirements of EASA AD 2012-0207-E, which is superseded, and introduces a new airspeed limitation (defined in IAS only) and introduces the new EHC procedure to replace the one incorporated in the AS350B3e RFM.
Effective Date:	19 October 2012
Required Action(s) and Compliance Time(s):	Required as indicated, unless accomplished previously: (1) Before next flight after 05 October 2012 [the effective date of EASA AD 2012-0207-E], install the V_{NE} IAS limit vs. flight altitude placard (specified as Label (2) in Eurocopter AS350 ASB No. 01.00.65) on the instrument panel, in full view of the pilot and co-pilot, in accordance with the instructions of paragraph 3.B.1 of Eurocopter AS350 ASB No. 01.00.65. (2) Before next flight after the effective date of this AD, accomplish the following actions concurrently: (2.1) Remove the V_{NE} limitation placard (specified as Label (1) in Eurocopter AS350 ASB No. 01.00.65), as previously required by paragraph (1) of EASA AD 2012-0207-E, from the helicopter, and (2.2) Replace the RFM specific pages, as previously required by paragraph (1) of EASA AD 2012-0207-E, with specific pages containing the temporary V_{NE} limitation, emergency procedure for in-flight vibrations felt in the pedals and temporary EHC procedure, which are provided in Section 4 Appendix of Eurocopter AS350 ASB No. 01.00.65 revision 1. Concurrent with making the changes as required by paragraphs (1) and (2) of this AD, inform all flight crews and, thereafter, operate the helicopter accordingly. (3) Before next flight after 05 October 2012 [the effective date of EASA AD 2012-0207-E], and thereafter, after each flight, without exceeding 3 flight hours between two consecutive inspections, visually inspect the laminated half-bearings in accordance with the instructions of paragraph 3.B.2 of Eurocopter AS350 ASB No. 01.00.65. (4) If, during any inspection as required by paragraph (3) of this AD, any

	deficiencies are found, defined as "Deterioration requiring replacement" in paragraph 3.B.3.a of Eurocopter AS350 ASB No. 01.00.65, before next flight, replace all 4 laminated half-bearings in accordance with the instructions of AS350B3 Maintenance Manual Work Cards No. 64-10-00, paragraph 4-3 and No. 64-10-00, paragraph 4-4. (5) During the next ALF check after 05 October 2012 [the effective date of EASA AD 2012-0207-E], disassemble the tail rotor in accordance with the instructions of paragraph 1.E.2.a.4 of Eurocopter AS350 ASB No. 01.00.65 and visually inspect the laminated half-bearings for deficiencies. If during this check, any separation, cracks, or extrusions in the elastomer are found in any bearing, before next flight, replace all 4 laminated half-bearings in accordance with the instructions of AS350B3 Maintenance Manual Work Cards No. 64-10-00, paragraph 4-3 and No. 64-10-00, paragraph 4-4. Note: Paragraph 3.B.3.b of Eurocopter AS350 ASB No. 01.00.65 instructs to replace only those half-bearings found damaged. Instead, this AD requires replacement of all 4 laminated half-bearings.
Ref. Publications:	Eurocopter AS350 ASB No. 01.00.65 original issue dated 04 October 2012 and Revision 1 dated 18 October 2012. The use of later approved revisions of this document 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. 2. The results of the safety assessment have indicated the need for immediate publication and notification, without the full public consultation process. 3. Enquiries regarding this AD should be referred to the Safety Information Section, Executive Directorate, EASA. E-mail: ADs@easa.europa.eu. 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, Telephone +33 (4) 42 85 97 97, Facsimile +33 (4) 42 85 99 66, E-mail: Directive.technical-support@eurocopter.com.

DIVULGAÇÃO

Todos os operadores das aeronaves AS350-B3e

APROVO

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