
AIRWORTHINESS DIRECTIVE

For the reasons set out in the background section, the CASA delegate whose signature appears below issues the following Airworthiness Directive (AD) under subregulation 39.001(1) of CASR 1998. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct the unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

Eurocopter AS 332 (Super Puma) Series Helicopters**AD/S-PUMA/73****OEI Training Flights/Main
Gear Box Freewheel Shaft****3/2008**

Applicability: EUROCOPTER AS332 L2 helicopters, with Main Gear Box (MGB) main reduction gear modules equipped with freewheel shafts part number (P/N) 332A32-2190-25 as listed below:

Freewheel shaft serial number (S/N)	installed on: main module P/N & S/N
M1608	332A32-3011-03M / M2062
M945	
M1078	332A32-3011-03M / M2088
M1087	
M1272	332A32-3011-03M / M2104
M1273	
M1688	332A32-3011-03M / M2016
M974	
M1231	332A32-3011-03M / M2079
M937	
M1115	332A32-3011-03M / M4001
M635	
M1159	332A32-3011-03M / M4004
M907	
M1124	332A32-3011-01M / M2044
M486	

Eurocopter AS 332 (Super Puma) Series Helicopters

AD/S-PUMA/73 (continued)

- Requirement:
1. For aircraft with MGB main reduction gear modules equipped with freewheel shafts as listed in “Applicability” section above, and unless Requirements 2, 3 or 4 of this AD is accomplished as applicable:
 - a) One-Engine-Inoperative (OEI) / Engine failure training is prohibited. Insert a copy of this AD in the Limitations section of the Flight Manual.
 - b) If an engine in-flight shut down occurs, comply with the instructions given in Para 2.B.2 of EUROCOPTER AS332 Alert Service Bulletin (ASB) No. 01.00.74 original issue or later NAA approved revisions.
 2. Replace MGB main reduction gear modules equipped with freewheel shafts P/N 332A32-2190-25 as listed below, in accordance with the instructions given in Para 2.B.2 of ASB No. 01.00.74 original issue or later NAA approved revisions.

Freewheel shaft: S/N	installed on: main module P/N & S/N
M1231	332A32-3011-03M / M2079
M937	
M1115	332A32-3011-03M / M4001
M635	
M1159	332A32-3011-03M / M4004
M907	
M1124	332A32-3011-01M / M2044
M486	

3. Replace MGB main reduction gear modules equipped with freewheel shafts P/N 332A32-2190-25 as listed below, in accordance with the instructions given in paragraph 2.B.2 of ASB No. 01.00.74 original issue or later NAA approved revisions.

Eurocopter AS 332 (Super Puma) Series Helicopters

AD/S-PUMA/73 (continued)

Freewheel shaft: S/N	installed on: main module P/N & S/N
M1608	332A32-3011-03M / M2062
M945	
M1078	332A32-3011-03M / M2088
M1087	
M1272	332A32-3011-03M / M2104
M1273	
M1688	332A32-3011-03M / M2016
M974	

4. Do not install MGB main reduction gear modules fitted with freewheel shafts as listed in the applicability section of this AD on a helicopter, without having ensured that the freewheel shafts of the main reduction gear module has been inspected by an approved repair station.

Note: EASA Emergency Airworthiness Directive No 2007-0312-E dated 21 December 2007 refers.

- Compliance:
1. a) and b) Before further flight, after the effective date of this AD.
 2. Within 40 Flight Hours (FH) after the effective date of this AD and at the latest by 31 May 2008.
 3. Within 200 Flight Hours (FH) after the effective date of this AD and at the latest by 30 June 2008.
 4. After the effective date of this AD

This Airworthiness Directive becomes effective on 13 March 2008.

Background: This AD is issued following a hard landing which occurred recently while conducting in-flight OEI/engine failure training. During a RH single-engine approach with idle rating training mode activated on the LH engine, the flight crew encountered a sudden loss of drive on the RH side of the MGB.

Eurocopter AS 332 (Super Puma) Series Helicopters

AD/S-PUMA/73 (continued)

MGB examinations revealed the failure of the RH freewheel due to excessive wear on some of its components. In case of freewheel malfunction on one of the two MGB inputs, the resulting overtorque at the remaining MGB input, given OEI mode activation, may not be transmitted by the second freewheel if the latter too is severely worn.

The analysis of the various recordings made during overhauls and supplied by various repair stations identified a list of offending MGB main reduction gear modules and freewheel shafts that are currently in service.

Consequently, this AD prohibits OEI/engine failure training with rotorcraft on which MGB main reduction gear modules equipped with freewheel shafts as listed in the "Applicability" section above and mandates their replacement.



Charles Lenarcic
Delegate of the Civil Aviation Safety Authority

14 January 2008