
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 39.1 (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.

Robinson R44 Series Helicopters

AD/R44/20 **Main Rotor Swashplate and Tail Rotor Bolts** **1/2004**
TX

Applicability: Model R44 helicopters.

- Requirement: 1. For all R44 and R44 II helicopters except those serial numbers specified in Requirement 2 of this Directive:
- a. Determine if maintenance has been performed after 7 February 2003 on the areas specified in Figure 1 of this Directive, and determine if any bolt, part number NAS6605-31, shown on Figure 1 has been replaced for any reason.
 - b. If any bolt has been replaced, or if it is uncertain whether any bolt has been replaced after 7 February 2003, remove the paint from the bolt head to reveal the vendor identification marking. Determine if the bolt vendor identification is 01DO.
 - (i) If the vendor identification is 01DO, comply with Requirements 3 and 4.
2. The following R44 and R44 II helicopters must comply with Requirements 3 and 4 of this Directive:
- a. Model R44 helicopters, serial numbers 0210, 0565, 0641, 0987 and 1312 through 1349, except 1345 and 1346; and
 - b. Model R44 II helicopters, serial numbers 10010, 10062, and 10083 through 10212, except 10092, 10173, 10204, 10207, 10210, and 10211.
3. For the helicopters affected by Requirements 1.b.(i) and 2. of this Directive, accomplish the following:
- a. Visually inspect each bolt for fretting residue under the bolt head, which indicates a loose, potentially cracked bolt.
 - b. Apply 10-15 ft-lb (13-20 Nm) torque to each bolt head and verify no rotation. See Figure 1 of this Directive.
 - c. If residue or rotation of the bolt is found, replace each affected bolt with a serviceable bolt that does not have a vendor identification marking of 01DO.

Robinson R44 Series Helicopters

AD/R44/20 (continued)

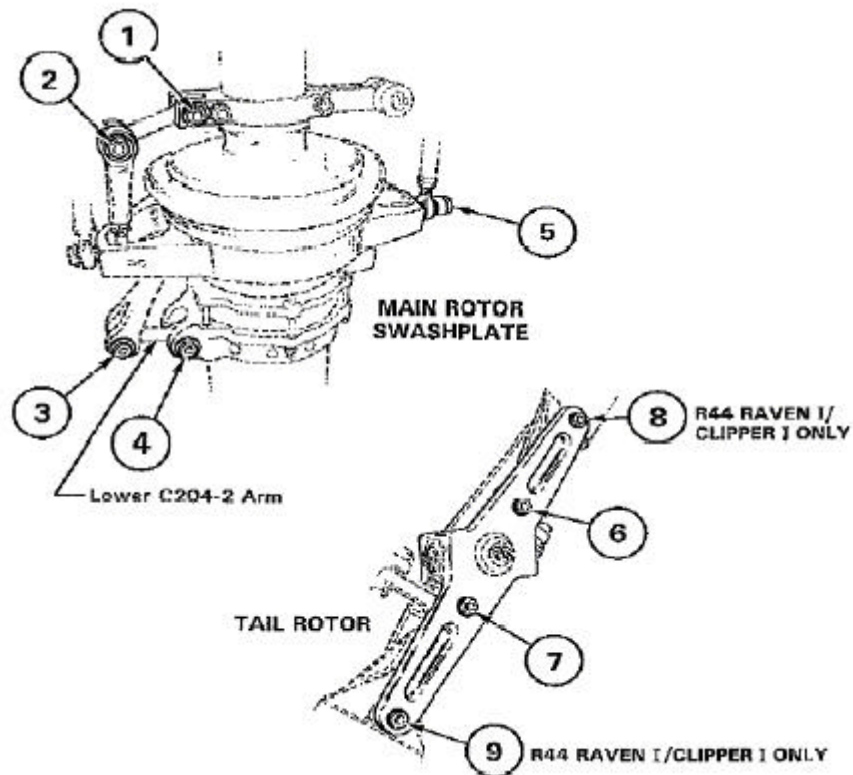


Figure 1

Note 1: Robinson Helicopter Company Service Bulletin SB-51, dated 24 November 2003, refers.

4. For the helicopters affected by Requirements 1.b.(i) and 2 of this Directive, replace each bolt, part number NAS6605-31, that has vendor identification marking 01DO on the bolt head, with a serviceable bolt, part number NAS6605-31, that has an alternative vendor identification marking.

Bolt part number NAS6605-31 with vendor identification marking 01DO on the bolt head, is not to be installed on any helicopter.

Note 2: FAA Emergency AD 2003-24-51 refers.

Compliance:

1. Before further flight after 3 December 2003.
2. At the times specified in Compliance 3 and 4.
3. Before further flight after 3 December 2003, and thereafter before first flight of each day of operation.

Robinson R44 Series Helicopters

AD/R44/20 (continued)

4. Within 10 hours time in service or before 31 December 2003, whichever occurs first; after determination of vendor identification and/or helicopter applicability.

This Airworthiness Directive becomes effective on 3 December 2003.

Background: The FAA received a report of the failure of the bolt that secures parts of the main rotor swashplate and attaches the tail rotor blade. Investigation revealed that the bolt failed due to hydrogen embrittlement. Hydrogen embrittlement is suspected to have occurred during the cadmium plating process of an entire batch of bolts, which makes the batch suspect.



David Villiers
Delegate of the Civil Aviation Safety Authority

2 December 2003