

ROBINSON HELICOPTER COMPANY

24747 Crenshaw Blvd Torrance, California 90505

(213) 539-0508 ■ Telex 18-2554 ■ TWX 910-347-6240 ■ FAX (213) 539-5198

SERVICE BULLETIN #58

DATE: 13 September 1988

TO: All R22 Owners and Service Centers

SUBJECT: Actuator Bearings

ROTORCRAFT AFFECTED: R22 Helicopters S/N 0002 through 0830

TIME OF COMPLIANCE: Complete Part I Inspections within the next 25 flight hours.

BACKGROUND:

Occasional failures of the upper and lower V-Belt actuator bearings still occur. Undetected failure of these bearings could lead to a power loss and result in a serious accident.

COMPLIANCE PROCEDURE:

Complete inspections in Part I on all affected aircraft. Completion of Part II is only required if discrepancies are found during the Part I inspections.

Part I - Inspections

1. Start-up, engage rotor, and vary the RPM through operating range with a mechanic standing near the V-Belt drive to listen for unusual bearing noise as described in Safety Notice 28 (copy enclosed).
2. Visually inspect the lower actuator bearing housing mounting brackets for looseness. If looseness is found, repair or replace as required and complete Part II.
3. Check the alignment of the upper and lower sheaves per Section 7.230 of the R22 Maintenance Manual. If the measured misalignment exceeds the allowable limits by more than .03 inches, Part II must be completed. Adjust the engine shimming and sheave alignment as required to bring the upper and lower sheaves within tolerance.
4. Check the V-Belt tension with the V-Belt Tension Tester-MT344-1 per Section 7.283 of the R22 Maintenance Manual. Field adjustment of the V-Belt tension is not allowed. If the belt tension is not within the specified range the actuator assembly must be returned to RHC for repair and Part II completed.
5. Using Chadwick-Helmuth Balancing equipment check and adjust the dynamic balance of the engine cooling fan. Refer to Section 6.240 REV 13 September 1988, of the R22 Maintenance Manual (copy enclosed). If the initial measured out-of-balance exceeds .40, Part II must also be completed.

(Over)

Part II Detail Bearing Inspection (If required by Part I)

Lower Actuator Bearing (A181)

1. With the clutch disengaged, remove the scroll and cooling fan per Section 6.210 of the R22 Maintenance Manual.
2. Disconnect the lower end of the actuator from the A181-1 bearing housing.
3. Using fingertips, rotate the bearing housing and check for sound or feel of any roughness, scraping, or looseness. Visually inspect the bearing for seal damage, loss of lubrication or signs of heat damage.
4. Carefully inspect the inner race of the bearing on the fanshaft. No movement or fretting is allowed between the inner race and the fanshaft.
5. If any indication of impending bearing failure is found on this inspection replace the A007-3 shaft and bearing assembly. Consult the R22 Maintenance Manual for removal and replacement of the shaft and bearing assembly.

Upper Actuator Bearing (A184)

1. Disconnect the centering strut located on the left side of the bearing housing.
2. Disconnect the bearing housing from the actuator motor housing.
3. Using fingertips, rotate the bearing housing and check for sound or feel of any roughness, scraping, or excessive looseness. Visually inspect the bearing for seal damage, loss of lubrication or signs of heat damage.
4. Carefully inspect the inner race of the bearing on the clutch shaft. The inner race of the bearing is torque striped to the clutch shaft at two points 180 degrees apart. Look for cracked or broken torque stripes or evidence of a fine reddish-brown residue originating from the bearing shaft seat. This residue indicates fretting is occurring. The outer race of the bearing is torque striped to the bearing housing. Replace the bearing if any indications of movement are noted.