

**R22**

Page 1 of 2

**SERVICE BULLETIN #74**

**DATE:** 18 July 1994

**TO:** R22 Owners and Operators

**SUBJECT:** Tail Rotor Gearbox Output Shaft Key

**ROTORCRAFT AFFECTED:** R22 Helicopters S/N 0002 thru 2180 with tail rotor gearboxes which were overhauled or manufactured by RHC prior to 08 June 1992.

**TIME OF COMPLIANCE:** Part A, within 20 flight hours.  
Part B, daily preflight check by the pilot until the gearbox is disassembled and inspected.

**BACKGROUND:** RHC has reports of two tail rotor gearboxes which were assembled without the key required to prevent the output gear from rotating on the output shaft. Both cases resulted in slippage of the tail rotor drive. In one case the slippage occurred on the ground, the other resulted in a forced landing which damaged the helicopter.

---

**COMPLIANCE PROCEDURE:**

PART A (to be performed by mechanics)

- 1) Remove transparent inspection cover on tailcone and rotate tail rotor blades so one blade leading edge is aligned with tailcone centerline. Mark dot on tailcone skin aligned with tip of blade leading edge. With same alignment, mark dot on centerline of tailcone skin at edge of inspection hole and corresponding dot on driveshaft flange.
- 2) Position the aft tail rotor blade with leading edge approximately 45° above horizontal. Engage clutch and rotor brake, if equipped. Use the engine ring gear holding tool, part number MT091-1, to keep the engine from rotating.
- 3) Using 1/2- to 2-inch wide flat webbing around the leading edge of the blade, suspend a 35 lb load from the tip of the aft tail rotor blade. Secure the webbing to the blade with tape to keep the webbing from sliding. The tail rotor blades should have rotated to be approximately horizontal when supporting the weight.

TECHNICAL REQUIREMENTS FAA APPROVED

(OVER)

**COMPLIANCE PROCEDURE:** PART A (cont'd)

- 4) If there is no slippage after 1 minute, remove weight and recheck alignment marks per Part B. If there is slippage, immediately ground helicopter and return gearbox to RHC.

**PART B** Daily Preflight Check (to be performed by pilot)

- 1) Rotate blades so alignment dot is visible in inspection window and tail rotor blade leading edge aligns with dot on tailcone. Ensure driveshaft flange dot is aligned with dot on tailcone skin.
- 2) If misalignment is detected, immediately ground helicopter and repeat Part A before further flight.

**Approximate Cost:**

**PARTS:** none required

**LABOR:** 0.3 manhours

