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SERVICE BULLETIN #50

DATE: 15 April 1986

TO: R22 Owners and Operators

SUBJECT: Vee Belt Drive

ROTORCRAFT AFFECTED: S/N 0002 thru S/N 0529 unless the new double-banded (A190-2) vee belts have been installed.

TIME OF COMPLIANCE: At the next 100 hour inspection or by 15 June 1986, whichever occurs first.

BACKGROUND: There have been incidents of vee belts rolling over and breaking or coming off. A new type belt has been developed by Gates in which the belts are banded together in pairs to prevent rollover.

COMPLIANCE PROCEDURE:

1. Obtain the new A190-2 Banded Vee Belt Set from RHC Customer Service.

2. Check the engine shimming height per Section 6.130 of the R22 Maintenance Manual. Adjust the shim height to 3.55 inches measured from the starter ring gear to the bottom of the upper steel frame.

3. Remove the engine cooling scroll and fan per Section 6.210 of the R22 Maintenance Manual.

4. With the engine cooling scroll and fan removed, inspect the lower bearing and drive sheave. If the belts have worn through the hard anodizing and bare aluminum can be seen, or if there are ridges or steps in the belt grooves, replace the lower sheave.

5. Mark and remove the intermediate flexplate.

6. Disconnect the clutch centering strut from the upper frame.

7. Adjust the actuator down stop screw to its highest position, allowing the actuator to disengage completely. Disengage the actuator. Disconnect the actuator wiring. The actuator does not have to be removed.

8. Loosen the belt guide on the upper frame.

9. Remove the A190-1 Vee Belt Set.

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10. Install the A190-2 Banded Vee Belt Set.

11. Connect the actuator wiring, and tywrap.

12. Reconnect the clutch centering strut, and torque the fastener.

13. Reinstall the intermediate flexplate and torque the fasteners.

14. Reinstall the engine cooling fan and scroll, and torque the fan shaft nut, per Section 6.220 of the R22 Maintenance Manual. Install the roll pin and safety wire.

15. Engage the actuator. Using the MT344 Bar supplied with the A190-2 Banded Vee Belts and a Gates Vee Belt Tension Tester, check the Vee Belt tension. The MT344-2 Bar is used to distribute the pressure on both belts in each pair when using the Gates tension tester. Place the MT344-2 Bar horizontally accross each banded pair of belts and deflect the belts with the tension tester placed in the center of the bar. With a .23 inch Vee Belt deflection, the tension should read 20 pounds plus or minus 2 pounds.

16. With the actuator fully engaged, check the upper and lower sheave alignment. The upper sheave must not be forward of the lower sheave. It must be .000 to .070 inches aft of the lower sheave. Adjust as necessary per Section 7.230 of the R22 Maintenance Manual.

17. With the actuator fully engaged, adjust the Vee Belt Guide. Position the guide to .18 inches clearance. The new A190-2 Banded Vee Belts will sit much higher in the drive sheave grooves. The guide should be flush with the front face of the upper sheave. Maintain .18 inches clearance between the guide attach bolts and the Tail Rotor push/pull tube.

18. With the actuator fully engaged, check the clearance between the intermediate flexplate and the Tail Rotor bellcrank. The minimum clearance is .25 inches. To increase the flexplate clearance, the washers at the bellcrank pivot may be reduced to a minimum of one AN960-416L and the A141-3 washer. Check the full travel of the Tail Rotor control to insure that the bellcrank and the push/pull tube do not interfere with the tailcone or scroll.

19. Disengage the actuator and adjust the actuator down limit screw to obtain a belt deflection of 1.4 to 1.8 inches with the actuator disengaged.

CAUTION

Be sure belt guide is readjusted per item 17.

Material: A190-2 Banded Vee Belt Set. List Price: $180.00

Labor: Three man hours without engine shimming. 4.5 man hours when engine shimming is required.

New Unused A190-1 Vee Belts in your spares inventory may be returned to RHC for credit.