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MANDATORY SERVICE BULLETIN SB-11

DATE: May 4, 1981

TO: All Owners and Operators of Robinson R22 Helicopters

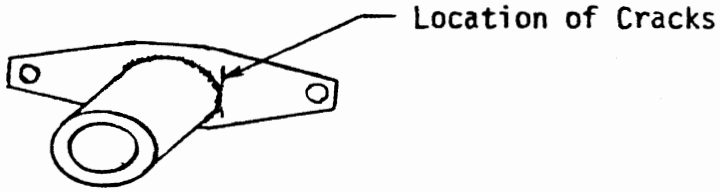
SUBJECT: Inspection of A192 and A194 Main Gear Box Yokes

ROTORCRAFT AFFECTED: R22 Serial Number 0002 thru 0107 which are still equipped with A192 or A194 yokes.

TIME FOR COMPLIANCE: Every ten (10) flight hours until the A192 and A194 yokes are replaced with A907 and A908 yokes.

BACKGROUND: Service Bulletin SB-9 required ten hour inspections of most A194 yokes. This bulletin extends that mandatory inspection to all A194 yokes and all A192 yokes.

MANDATORY INSPECTION: Immediate, if not accomplished within the past ten (10) flight hours, and every ten (10) flight hours thereafter, dye check the flanges of the A192 and A194 yokes. The primary area to be checked is shown in the sketch below. After the first inspection, the yokes may be dye checked without removal from the aircraft. Procedure for the first inspection is given on pages 2 and 3 of this bulletin.



CORRECTIVE ACTION: If any indication of a crack is found, the defective yoke must be replaced with an A907 or A908 yoke before further flight.

C A U T I O N

In two cases, an erractic drop in rotor RPM was observed just before the yoke failed. If the rotor tachometer shows an unusual drop in RPM, land immediately. Dye check the A194 yoke before flight is resumed.

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A192 AND A194 YOKE INSPECTION

Materials Required:

1. Portable dye penetrant inspection kit similar or equivalent to Uresco Model TT-101 spray can system. Penetrant method must be of the Post-Emulsified type per MIL-I-6866B (ASG), Type II visible dye, Method B.
2. Epoxy paint remover similar or equivalent to Tal Strip #2813.
3. Ten-power magnifying glass.
4. Zinc chromate primer.

Inspection Procedure:

1. Disconnect the A193-2 flex plate from the A197-1 tail rotor drive shaft by removing the two pal nuts and NAS679A4 nuts.
   Note: Using a magic marker, place an "X" on one ear of the flex plate and the adjacent ear of the tail rotor drive shaft. Be extremely careful on re-installation to install the bolts and washers exactly as removed, to prevent any shim change of the tail rotor drive line.
2. Disconnect the A193-1 flex plate from the A192 and A194 yokes. Remove the four pal nuts, NAS679A5 nuts, A559 washers and NAS1305-4 bolts. Rest the clutch shaft on the horizontal fire-wall.
3. Remove the cotter pin, castellated nut, and washer that attach the A194 yoke to the main rotor gearbox pinion shaft and remove the yoke.
4. Using the epoxy paint stripper, per the manufacturer's in-struction, to remove the paint from the A194 and A192 coupling around the welded areas on both sides of the couplings. The paint should be stripped back at least one-half inch from the weld on the flange side of the joint.

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5. Using the dye penetrant kit, per the manufacturer's instructions, inspect the A194 and A192 yokes. Pay close attention to the flange area adjacent to the welds.

6. Clean and visually inspect the yokes in the areas described in Step 5 with a ten-power magnifying glass.

7. If no cracks are found, reinstall the yokes, using the reverse procedure in Steps 1 through 3. Re-torque stripe fasteners.

NOTE 1: Prime with zinc chromate prior to reinstallation (areas inspected in Step 6). If any cracks are found, the helicopter must not be flown until the defective yoke is replaced. Notify factory immediately.

NOTE 2: Magnaflux inspection may be substituted for dye penetrant.

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