HUGHES SERVICE INFORMATION NOTICE

NOTICE NO. N-174

DATE 23 February 1981

MANDATORY MANDATORY MANDATORY

SUBJECT: INSPECTION OF PN 269A5050-73 THRUST BEARING; MRC PN 9210-UPZ-2, SN 539 THROUGH 647

MODELS AFFECTED: Helicopter Models 269A, 269A-1, and 269B

TIME OF COMPLIANCE: Shall be accomplished within next 25 hours of operation for bearings with 300 or more hours time in service, within next 100 hours of operation for bearings with 200 hours or less time in service, and prior to 325 hours total time in service for bearings with 200 hours or more but less than 300 hours.

PREFACE: Analysis of subject MRC bearings whose ball cages had broken revealed that a step had been left in their outer races during a grinding operation. Spalling occurred in the outer race with subsequent cracking and breaking of the ball cage. This condition is confied to MRC's bearings with serial numbers 539 through 647.

Reference

Hughes 269 Series Helicopter Basic Handbook of Maintenance Instructions, Reissued 1 April 1980.

Customer Service Department

PARTS LIST

Nomenclature	Part No.	Qty	Mfr
Bearing	269A5050-73	1	MRC

MATERIALS

Primer coating, zinc chromate, low-moisture-sensitive (TT-P-1757)	908-L-02110	AR	Glidden-Durkee Div., SCM Corp. 900 Union Commerce Bldg. Cleveland, Ohio 44115
Anti-Seize Compound (Thread lube) (MIL-A-907)		AR	Loctite Corp. 705 N. Mountain Road Newington, Ct. 06111

TOOLS AND EQUIPMENT

Wrench, 269A1306 Nut Installation	269A9228	1	Hughes Helicopters
Tube, Main Rotor Drive Shaft	269A9278	1	Hughes Helicopters

REWORK PROCEDURE

a. Check aircraft maintenance log book for latest incidence of main rotor drive shaft thrust bearing replacement, and note manufacturer and serial number of thrust bearing installed. If bearing is MRC PN 9210-UPZ-2 with serial number falling within range 539 through 647, inclusive, or if part number and serial number have not been logged, proceed with steps b through y for bearing removal and replacement.

NOTE

If serial number of bearing is unknown, removal of the main rotor and drive shaft to check the bearing serial number may be performed per removal method II as noted in Section 10, basic HMI.

b. Remove all three main rotor blades, pitch bearing assemblies, rotor hub, and swashplate assembly. (Refer to Section 8, basic HMI.)

c. Bend eight tangs on thrust bearing lockwasher to clear thrust nut and mast assembly.

d. Remove thrust bearing nut, using bearing nut wrench together with 30-inch extension arm. See figure 1.

e. Remove main rotor thrust bearing spacer tube.

f. Reinstall thrust bearing nut, but do not apply final torque.

g. Place main rotor drive shaft tube tool over main rotor thrust bearing nut, then reinstall hub temporarily by attaching hub assembly through shaft to lifting eye with three bolts only. Be sure hub assembly is secure on shaft.

h. Have assistant hold tail rotor to prevent rotation of shaft in transmission assembly while pulling thrust bearing.

i. Using thrust bearing nut wrench along with a 30-inch extension arm, back off thrust bearing nut to take up slack, then continue to raise shaft until shaft and thrust bearing nut are free from mast housing.

j. Remove hub assembly, bolts, and shaft tube.

k. Remove main rotor driveshaft and thrust bearing from main rotor mast housing.

l. Inspect thrust bearing for name of manufacturer and serial number. MRC bearing, PN 9210-UPZ-2, with serial number falling within the range 539 through 647, inclusive, must be replaced with one not in this serialization range.

m. Remove bearing from shaft; press it off if necessary. If bearing is not one having a serial number falling within the range noted, proceed with step o below.

n. Ship suspect bearing to Hughes Helicopters. Include HH form 9629. Address package as follows:

Hughes Helicopters
Centinela and Teale Streets
Culver City, CA 90230

Attention: Richard L. Head,
Adminstrator
Warranty and Repair Dept.
Bldg. 15, T172

o. Clean and inspect main rotor drive shaft. (Refer to Section 10, basic HMI.)

p. Inspect and lubricate thrust bearing. (Refer to Section 10, basic HMI.)

CAUTION

At replacement of thrust bearing, replace 269A5050-73 with -73 only.

NOTE

Be sure that bearing side without race seal is up.

q. To prevent damage to bearing, cool shaft in ice and warm bearing in oven. Do not heat bearing to a temperature that would melt the packed grease. Do not exceed a temperature of 250°F (121°C).

r. Press thrust bearing on main rotor drive shaft bearing shoulder. Apply pressure to inner race only.

s. Coat outside diameter of bearing and inside diameter of bore in mast assembly with zinc chromate primer, then install shaft and bearing in main rotor mast. Be sure drive shaft gear end is properly meshed.

t. Check double lip seal in bearing nut for damage. Pack cavity below seal with appropriate grease per basic HMI. Check that drain hole above seal is open.

NOTE

With bearing nut properly torqued, lockwasher should be free to turn to line up tangs.

u. Coat threads of thrust bearing nut with thread lube, then install new thrust bearing nut lockwasher under thrust bearing nut and install nut in mast.

CAUTION

Torque wrench must be at right angle to special wrench to obtain correct torque value in next step. Do not overtighten thrust bearing nut. Damage to nut threads may result.

v. Using thrust bearing nut wrench, along with torque wrench, torque the thrust bearing nut to 75 to 100 foot-pounds.

w. Bend four alternate tangs of lockwasher down into mast castellations and remaining four tangs up into thrust nut castellations.

CAUTION

In next step, be sure that end of spacer tube marked UP is at top and larger (flanged) end of spacer tube is down. Ensure that drain hole in thrust bearing nut is open.

x. Install main rotor thrust bearing spacer tube.

y. Install remaining components of main rotor installation (swashplate assembly, rotor hub, pitch bearing assemblies, and main rotor blades). (Refer to Section 8.)

WEIGHT AND BALANCE DATA

Weight and balance not affected.

FAA/DER APPROVED 25 February 1981

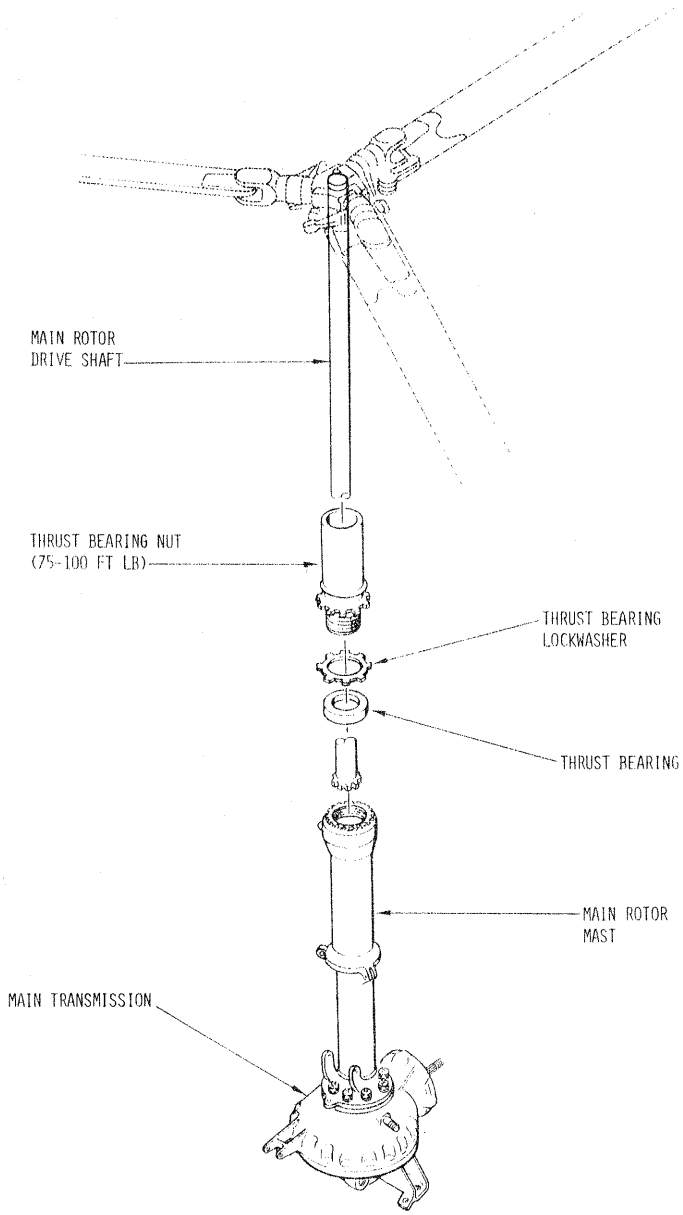

Figure 1. Main Rotor and Main Transmission Essential Components