



**HUGHES
SERVICE INFORMATION
NOTICE**

NOTICE NO. N-47*

DATE April 18, 1968

PAGE 1 OF 5

*Supersedes Hughes Service Information Notices 2A-39.2, 2A-1-06.2, 2B-07.2, dated 2 February 1965

MANDATORY

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FAA APPROVED

SUBJECT: INSPECTION - MAIN ROTOR BLADE FLAPPING HINGE BEARINGS

MODELS AFFECTED: All 269 Series Helicopters

TIME OF COMPLIANCE: **

PREFACE: ***

() Bar denotes portion of text added or superseded

Customer Service Department

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PAGE 2 OF 5

**** TIME OF COMPLIANCE: PART I -** Shall be complied with within 10 hours time in service, unless already accomplished within last 15 hours of operation, and at each 25 hour lubrication period thereafter.

PART II - Shall be complied with as specified below, and at each 400 hour inspection thereafter.

1. Within first 110 hours of operation for helicopters having less than 100 hours time in service, unless already accomplished.

2. Within next 10 hours of operation for helicopters having more than 100 hours in service, unless already accomplished within last 390 hours.

***** PREFACE:**

The data given in this Service Information Notice clarifies and expands the existing inspection criteria for the main rotor blade flapping hinge bearings.

No additional work is required if compliance with Hughes Service Information Notices 2A-39.2, 2A-1-06.2 or 2B-07.2 has been accomplished.

Incidents have occurred which indicate that strict adherence to the lubrication procedures defined in Section II of the Handbook of Maintenance Instruction is essential to ensure maximum operating performance and service life of helicopter components. Lubrication procedures for the main rotor flapping hinge bearings are designed specifically to inhibit brinelling and abnormally rapid wear and resultant bearing failure. A brinelled inner race normally means that there is corresponding wear on the outer race, even though it cannot be seen with the needles in place.

Proper inspection techniques will help detect bearing wear and damage, and determine replacement of bearings before failure occurs. Bearing failure, if undetected, can cause undue vibration loads on main rotor blades and possible fatigue failure.

As stated in the Handbook of Maintenance Instruction, proper lubrication procedures require that the bearings be purged of contaminated grease at the 25 hour lubrication period. In the case of the flapping hinge bearing, one grease fitting is used to service the trailing edge flapping hinge bearing of one blade, and the leading edge bearing of the following blade. Purging is accomplished when clean grease appears at both ends of the flapping hinge bolt both inside and outside the blade yokes of the hub.

Bearings in oscillating service tend to pack the lubricant to the side of the ball or roller operating space. Galling and fretting corrosion is the direct result if any grease other than MIL-G-25537 (AEROSHELL 14) is used. MIL-G-25537 grease was designed to overcome the above problem and has a bleeding oil phase which tends to maintain a film of lubricant between the rolling bearing element and inner and outer bearing races. For this reason, use of MIL-G-25537 grease for the flapping hinge bearings is imperative for satisfactory service.

Reference

269A/A-1/TH-55A Handbook of Maintenance Instruction, Reissued 15 Dec. 1967
269B Handbook of Maintenance Instruction, Reissued 1 April 1968
269A-2 Handbook of Maintenance Instruction, Addendum, 1 April 1967
Hughes Service Information Notice No. N-10.1, dated 14 December 1967

PART I - LUBRICATION - FLAPPING HINGE BEARINGS

- a. Lubricate flapping hinge bearings, per Section II of the HMI.

CAUTION

If clean grease is not apparent, bearings will not be purged of minute fretting products. Remove and inspect flapping hinge bearings, per Part II.

NOTE

Proper purging is accomplished when clean grease appears (1) from under and through holes in seal retainer plates located under head and nut ends of bolts, and (2) from around thrust washer located inside of three blade yokes of main rotor hub.

PART II - INSPECTION - FLAPPING HINGE BEARINGS

- a. Remove main rotor blades, damper assemblies, and pitch bearing assemblies, per HMI.

NOTE

To aid in identification, tag bearings as follows:

- (1) Flapping hinge bearing inner race: blade color code, whether leading or trailing edge, aircraft model and serial number.
- (2) Lead-lag hinge bearing: blade color code, whether top or bottom, aircraft model and serial number.

- b. Inspect main rotor blade flapping hinge bearings, per Para. 4-39, HMI.

CAUTION

If any brinelling or irregularities exist, replace bearing inner and outer race, and "O" rings under seal retainer plate with new parts.

If inspection of bearing inner race reveals brinelling or wear in excess of 0.002 inch., remove and retire corresponding main rotor blade from service. If brinelling or wear is evident, but does not exceed 0.002 inch, inspect corresponding main rotor blade as follows:

1. Using 8 to 12 power magnifying glass and good lighting source, inspect upper and lower skin for cracks adjacent to, and forward and aft of, blade root fitting at outboard bolt holes, per Para 4-11, HMI.
2. If any cracks are found, remove and retire blade from service.

c. Reinstall pitch bearing assemblies, damper assemblies, and main rotor blade assemblies, per HMI.

d. Perform inspection of main rotor blades in manner and at periods specified by Hughes Service Information Notice N-10.1, dated 14 December 1967.