SCHWEIZER 269 SERIES

SCHWEIZER SERVICE NOTICE

* Supercedes Service Information Notices No. N-170, Dated 18 Aug. 1980 and N-151.2, Dated 7 Nov. 1978

MANDATORY MANDATORY MANDATORY

SUBJECT: MAGNETIC PARTICLE INSPECTION OF MAIN TRANSMISSION PINION ASSEMBLIES.

MODELS AFFECTED:
- All 269 Series Helicopters equipped with a main transmission pinion assembly which is listed under PINIONS AFFECTED.
- All main transmissions in spares inventory equipped with a pinion assembly which is listed under PINIONS AFFECTED.
- All pinion assemblies in spares inventory which are listed under PINIONS AFFECTED.

PINIONS AFFECTED:
- All 269A5103, 269A5103-9, and 269A5103-21 main transmission pinion assemblies not previously inspected per Service Notice N-151.2 or Service Notice N-170.
- All 269A5103-31 main transmission pinion assemblies with serial numbers that do not begin with the letter 'S'.

TIME OF COMPLIANCE:
- Shall be accomplished on affected pinion assemblies installed on helicopters at the next 300 hour inspection, or at next overhaul of the main transmission, whichever occurs first.
- Shall be accomplished on affected pinion assemblies installed on main transmissions in spares inventory, prior to placement of the main transmission into service or within one year of issue date of this notice, whichever occurs first.
- Shall be accomplished on affected pinion assemblies in spares inventory, prior to installation on main transmission or within one year of issue date of this notice, whichever occurs first.

REFERENCE: 269 Series Basic HMI, Reissued 15 March 1982
269 Series HMI Appendix C, Part I, Issued 15 March 1976, Revised 15 Aug 1980.

PREFACE: Reports indicate that cracking of the affected pinion assemblies has occurred in service. The information provided in this Service Information Notice lists instructions to identify (by Part Number and Serial Number) and inspect (if required) main transmission pinion assemblies. Instructions for polishing out surface defects are also provided. Pinion assemblies which are found to be unserviceable must be marked and tagged "UNSERVICEABLE" and returned to an authorized SAC Service Center or Distributor.

TOOLS AND EQUIPMENT

Kit - Magnetic Particle Inspection	MIL-I-6868	Commercial
Lathe or Equivalent Rotating Fixture		
Magnifying Glass - 10x Minimum		
Emery Cloth - 400 Grit		
Tongue Depressor		
Stone - Extra Fine Arkansas or Carborundum		Commercial

PROCEDURE

a. Identify pinion assembly by Part Number (PN) and Serial Number (SN). (Refer to Figure 1 for PN and SN locations on shaft, or to Helicopter Log Book, if pinion is installed on helicopter.)

NOTE

Identification of pinion assembly may be accomplished by referring to component record of Helicopter Log Book, if pinion is installed on helicopter. If pinion is not installed on helicopter, or if PN and SN are not recorded in Log Book, remove belt drive transmission and upper pulley assembly (Basic HMI, Section 10) and obtain pinion assembly PN and SN from pinion shaft. (Location of PN and SN on shaft is shown in Figure 1.)

b. If pinion is installed on helicopter, check Compliance Section of Helicopter Log Book for compliance with Service Notice N-151.2 or N-170.

c. If pinion is installed on main transmission in spares inventory, check for the presence of a blue or white dot on transmission ID plate. (Blue dot indicates compliance with Service Notice N-151.2. White dot indicates compliance with Service Notice N-170.)

d. If pinion assembly is in spares inventory, check corresponding documentation for record of compliance with Service Notice N-151.2 or N-170.

NOTE

Pinion assemblies previously inspected in accordance with Service Notice N-151.2 (or prior revision) or Service Notice N-170 do not require the inspection specified in steps e through n (below). 269A5103-31 pinion assemblies having a serial number that begins with the letter 'S' are also exempt from the following inspection. (Refer to PINIONS AFFECTED.)

e. As applicable, remove main transmission assembly (Basic HMI, para. 10-16).

f. As applicable, separate transmission housings and remove pinion shaft assembly (HMI Appendix C, Part I, para. 2-6).

g. As applicable, disassemble pinion shaft and bearing retainer assembly (HMI Appendix C, Part I, para. 2-7).

h. Clean pinion assembly.

i. Using 10x magnifying glass, visually inspect pinion for scratches, tooling marks, corrosion, or other surface defects. Pay particular attention to fillet radii of forward bearing journal. (Refer to Figure 1.)

j. If scratches, tooling marks, corrosion, or other surface defects are noted, proceed as follows.

(1) Position pinion on lathe by centers.

NOTE

Extra fine arkansas or carborundum stone may be used as an alternate to emery cloth when polishing out defects in next step, provided that the diameter of stone matches fillet radii. These two methods (emery cloth and/or hand stone) are the only approved methods for polishing out defects.

(2) Using fine emery cloth wrapped around tongue depressor, polish out defects on pinion as it is rotated on lathe or fixture. Break corners at Keyways (BSC and -9 only). Do not polish pinion threads or bearing journals.

k. Clean pinion assembly and perform magnetic particle inspection of entire pinion in each of the following methods:

NOTE

Pay particular attention to forward end of bearing journal and fillet radii, pinion gear teeth, and threaded area just forward of H-Frame bearing journal when performing the following inspections. (Refer to Figure 1.)

(1) Magnetize with a head shot with flux density (amperage) in accordance with MIL-STD-1949 and inspect keyway, gear teeth, and bearing journal for indications of longitudinal cracks.
(2) Magnetize with a coil shot with flux density (amperage) in accordance with MIL-STD-1949 and inspect bearing journal and fillet radii for indications of radial cracks.
(3) Magnetize with a coil shot with one-fourth (1/4) of the flux density stipulated in MIL-STD-1949, to avoid masking effects in threaded area and inspect threaded area for indications of radial cracks.

l. If magnetic particle inspection discontinuity indication(s) are noted in area polished per step j (above), proceed as follows:
(1) Re-polish shaft (step j, above).
(2) Repeat magnetic particle inspection (step k, above).
(3) If indication cannot be removed by re-polishing, or if minimum diameter at bottom of fillet radius after polishing is less than 1.472 inches, mark and tag pinion as unserviceable and return pinion to an authorized SAC Customer Service Center or Distributor.

m. If any other evidence of cracking is noted, mark and tag pinion as unserviceable and return pinion to an authorized SAC Service Center or Distributor.

n. If pinion is determined to be serviceable, clean and coat entire pinion with transmission lubricating oil.

o. As applicable, reassemble pinion shaft and bearing retainer assembly (HMI Appendix C, Part I, para. 6-5).

p. As applicable, reassemble main transmission in accordance with HMI Appendix C, Part I, Section 6.

q. As applicable, perform final check of main transmission (HMI Appendix C, Part I, para. 6-18).

r. As applicable, reinstall main transmission (Basic HMI, para. 10-17).

s. As applicable, reassemble and install belt drive transmission in accordance with Basic HMI, Section 10.

t. As applicable, perform the following:
   (1) If pinion is to remain in inventory, provide pinion with a tag which records compliance with this Service Information Notice.
   (2) After pinion has been installed in main transmission, paint a white dot on transmission ID plate next to the serial number to denote compliance with this Service Notice.
   (3) After pinion has been installed on helicopter, record part number, serial number, and manufacturer of pinion assembly in Helicopter Log Book. Also record compliance with this Service Information Notice in Compliance Section of Helicopter Log Book.

WEIGHT AND BALANCE DATA

Weight and balance not affected.

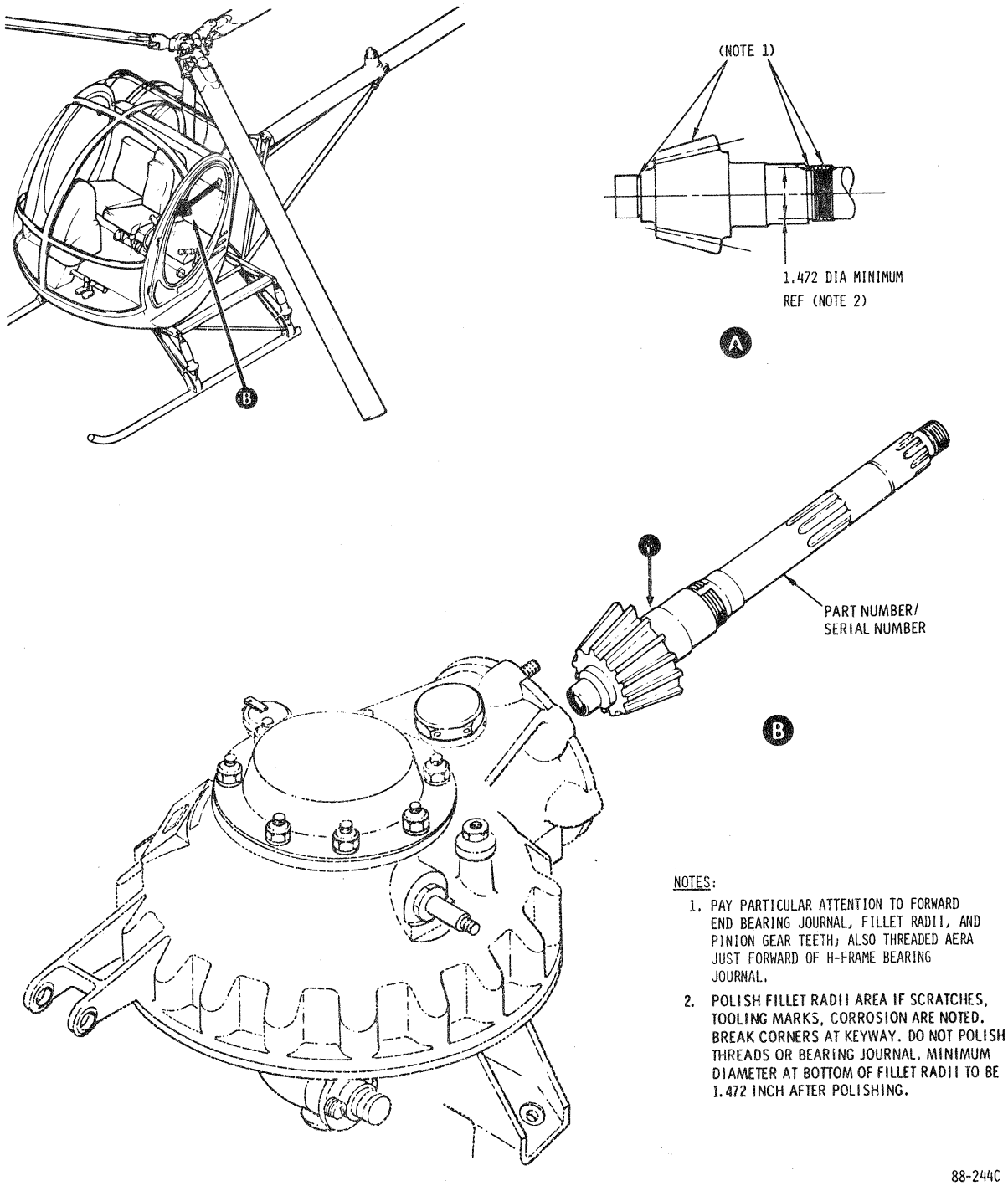

Figure 1. Inspection of main transmission pinion assembly