

ALERT SERVICE BULLETIN

NO. 214ST-97-78

Bell Helicopter **TEXTRON**

DATE 7-17-97

A Subsidiary of Textron Inc.

Post Office Box 482 • Fort Worth, Texas 76101

PAGE NO. 1 of 8

DATE

REV.

MODELS AFFECTED: 214ST

SUBJECT: SELF-LOCKING BARREL NUT,
P/N NAS577B-10A ONE TIME INSPECTION.

HELICOPTERS AFFECTED: All Model 214ST Helicopters; and all spare main rotor hub, main rotor grip, main rotor pitch horn, and tailboom assemblies, and spare P/N NAS577B-10A Barrel Nuts.

COMPLIANCE: Immediately upon receipt of this Alert Service Bulletin.

DESCRIPTION:

During disassembly of another Bell Helicopter model for shipment, a barrel nut, P/N NAS577B-10A, was found cracked through the threaded portion of the nut. These nuts are also used in the 214ST helicopter. Laboratory analysis determined the failure to be the result of hydrogen embrittlement introduced during manufacture. Bell Helicopter has determined that the failed nuts were received as a part of two manufacturing lots, #2632690 and #2632680, from Kaynar Technologies Inc. These nuts may have been installed in spare main rotor hub, grip, pitch horn, and/or tailboom assemblies; and, may also have been supplied as individual spares.

Kaynar P/N NAS577B-10A barrel nuts have been fabricated with either a "thick" or "thin" bearing surface flange. Suspect barrel nuts have the "thin" flange while the "thick" flange configuration nuts are considered serviceable.

This Alert Service Bulletin requires an immediate one time inspection of thin flange P/N NAS577B-10A barrel nuts manufactured by Kaynar.

7851 55192 REV. 1278

AN APPROPRIATE ENTRY SHOULD BE MADE IN THE AIRCRAFT LOG BOOK UPON ACCOMPLISHMENT
IF OWNERSHIP OF AIRCRAFT HAS CHANGED PLEASE FORWARD TO NEW OWNER

APPROVAL:

The engineering design aspects of this bulletin are FAA/DER approved.

MANPOWER:

Approximately 3.0 man-hours will be required to accomplish this bulletin.

Man-hours are based on "hands-on-time" and may vary due to manpower and facilities available to the operator.

MATERIALS:

Required Material:

The following items may require replacement, dependent upon the outcome of the inspection called out in the accomplishment instructions. The actual quantities needed, if any, will be determined by the operator during the inspection and are available through your Bell Helicopter Textron Supply Center. Please see the Accomplishment Instructions prior to ordering any of the parts.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>
20-057-10-82H	Bolt (Pitch Horn/Grip)	AR
MS21250H10032	Bolt (Lower Tailboom)	AR
MS21250H10036	Bolt (Upr Rt Tailboom)	AR
MS21250H12038	Bolt (Upr Lft Tailboom)	AR
NAS577B10A	Barrel Nut	AR
NAS577B12A	Barrel Nut (Upr Lft Tailboom)	AR
NAS6610H76	Bolt (Pitch Link/Pitch Horn)	AR

WARRANTY:

Owners/operators with the "KAYNAR TECHNOLOGIES THIN FLANGED BARREL NUTS" which were provided by Bell Helicopter, are eligible for a special 100% warranty credit toward the purchase of replacement barrel nuts. If the barrel nut was installed in

the aircraft, and was found cracked, the attaching bolt must also be replaced per this ASB, and will be covered by this special warranty as well.

To receive this credit:

- Customers must purchase the replacement parts from an approved BHTI spares supply source.
- Comply with the instructions outlined in this bulletin no later than August 15, 1997.
- Submit a completed Malfunction Report to BHT Warranty Administration within 30 days after accomplishing the instructions in this bulletin. A copy of the BHTI invoice referencing the parts purchased to accomplish this bulletin must be attached to the Malfunction Report.

- NOTE -

Customers who fail to comply with the instructions in this bulletin within the parameters specified above are not eligible for the special warranty credit provisions listed above.

SPECIAL TOOLS:

None required.

WEIGHT AND BALANCE:

Not affected.

ELECTRICAL LOAD DATA:

Not affected.

REFERENCES:

BHT-214ST-MM, Chapters 53 and 62
BHT-214ST-CR&O, Chapter 62
BHT-214ST-IPB, Chapters 53 and 62

PUBLICATIONS AFFECTED:

None.

ACCOMPLISHMENT INSTRUCTIONS:

- CAUTION -

Barrel nut part numbers and the manufacturer's identification mark will be located together only on one end of the barrel nut. Depending on the position of the barrel nut in the bore or the style of retention clip utilized, identification may be difficult, necessitating some disassembly of the component for removal of the barrel nut.

- NOTE -

In all instances below where disassembly is required, refer to the appropriate chapters of either the 214ST maintenance and/or component repair and overhaul manuals as applicable. Disassemble only as necessary to comply with this ASB.

- NOTE -

If tailboom attach barrel nuts require removal for inspection, they may be removed one at a time. Ensure the tailboom is adequately supported during bolt removal and installation.

1. Gain access to the component/assembly/barrel nut being inspected. Refer to Figure 1 for P/N NAS577B-10A applications. The following inspections also apply to all P/N NAS577B-10A barrel nuts which may be on hand as individual spares.

- a. Viewing the end of the barrel nut, inspect the barrel for the presence of a manufacturer's mark. Kaynar nuts are identified by the presence of a "K", depressed above the basic part number, **NAS577B** (refer to Figure 2). For installed barrel nuts, if the part number or manufacturer's mark can not be seen; or are not legible, the barrel nut must be removed from the component (see caution note above). If any manufacturer's identifying mark is found other than "K", the barrel nut is considered serviceable and no further action is required.

- NOTE -

P/N NAS577B-10A Barrel Nut has superseded P/N NAS577-10A Barrel Nut. P/N NAS577-10A Barrel Nuts, including those manufactured by Kaynar, are not subject to this ASB and, if found, need not be inspected for cracks.

- b. If the "K" marking is found, measure the distance from the center of the roll pin securing the nut in the barrel to the flat surface of the barrel (refer to Figure 2). If the edge distance is approximately .115 inch, the nut is considered serviceable, no further action is required. If the dimension is approximately .155 inch, remove the barrel nut from service and replace with a serviceable barrel nut.

- NOTE -

Replace any barrel nut that can not be positively identified.

- c. Inspect barrel nuts, removed as unserviceable in paragraph 1.b. above, for:
- 1) cracks using a 10 power magnifying glass. Should a crack be found in an installed nut, its corresponding bolt must also be replaced.

- 2) evidence of lubrication residue in the threaded portion of the nut and its corresponding bolt. If lubrication residue is found in the threads of either the barrel nut or bolt, both the barrel nut and bolt must be replaced.
 - d. Should a cracked nut be found at the right hand upper tailboom attach location, also replace the opposite (upper left) barrel nut and bolt upon reassembly. Inspect both upper tailboom and fuselage longeron fittings for obvious damage or deformation.
2. Following inspection, reassemble as necessary ensuring that both bolt and barrel nut threads are clean and free of any lubricant or corrosion compound. Annotate compliance with this ASB in helicopter and/or component historical records.

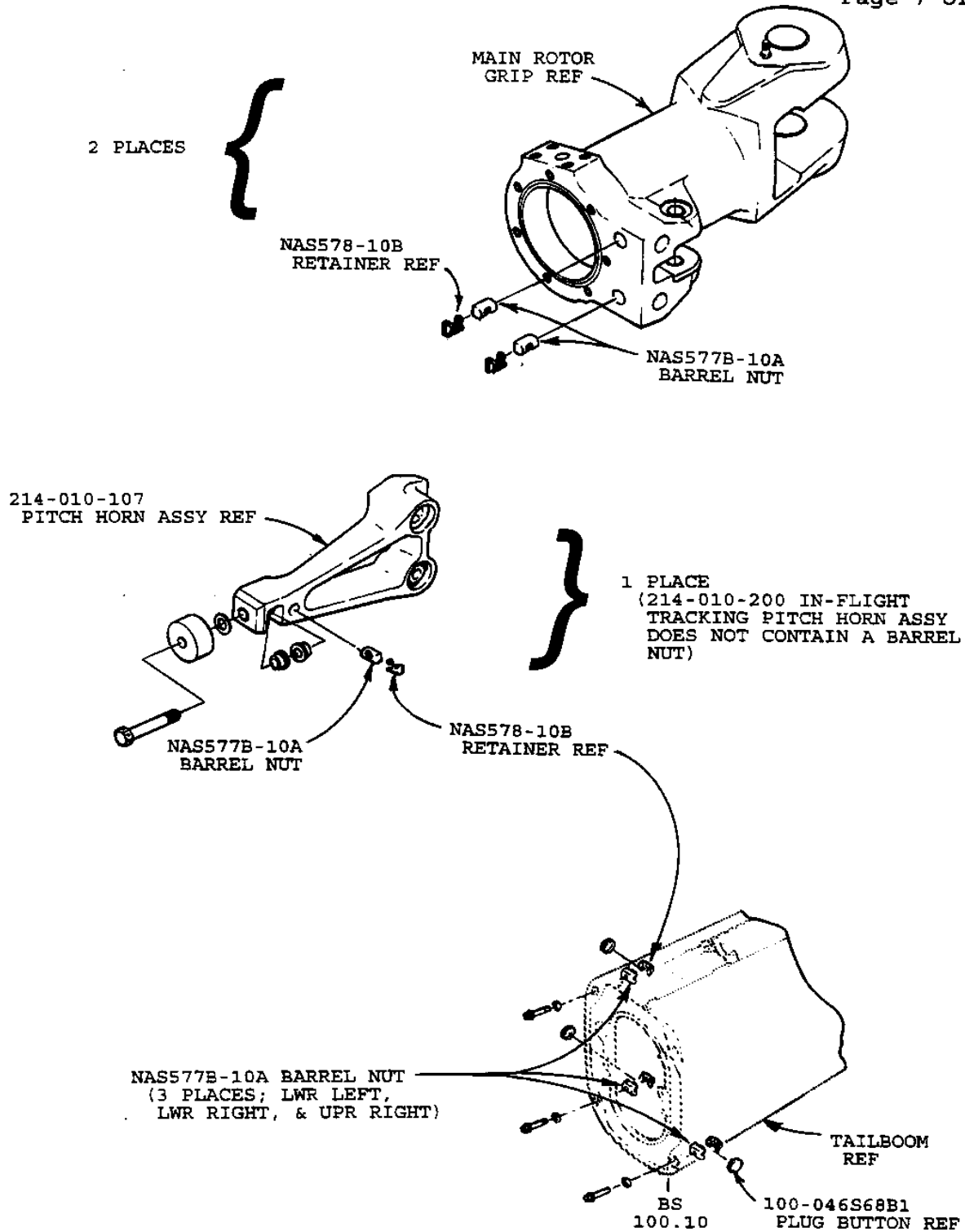


FIGURE 1
NAS577B-10A BARREL NUT LOCATIONS

-CAUTION-

THE PART NUMBER AND MANUFACTURER'S CODE ARE LOCATED TOGETHER ONLY ON ONE END OF THE BARREL NUT. THEY MAY ALSO BE OBSCURED BY A PORTION OF THE RETAINER. FOR INSTALLED ASSEMBLIES IT MAY BE NECESSARY TO REMOVE THE BARREL NUT FOR PROPER IDENTIFICATION.

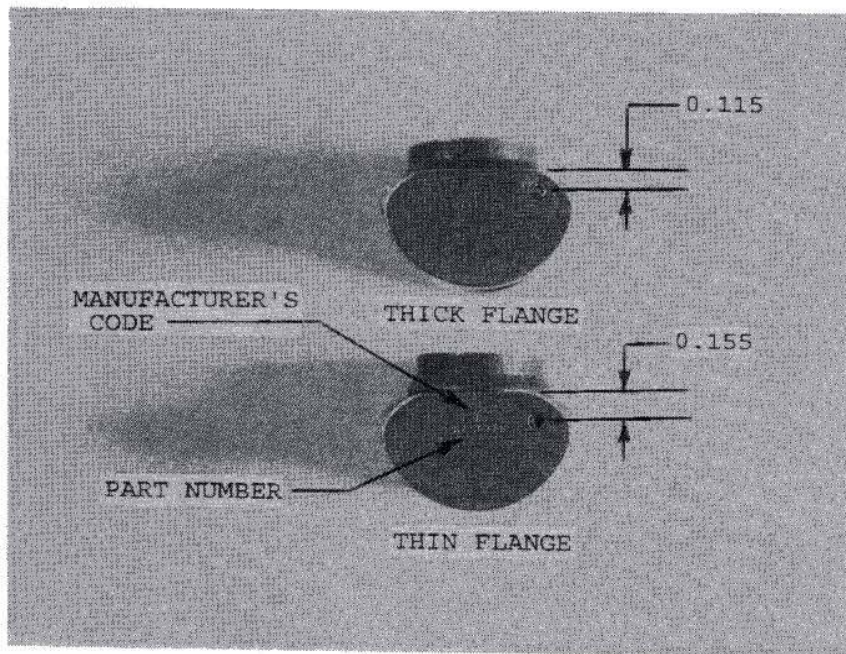


FIGURE 2
NAS577B-10A BARREL NUT
(NAS578 RETAINER NOT SHOWN)