

ALERT SERVICE BULLETIN



A Textron Company

NO. 214-10-71

DATE Dec 10, 2010

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DATE
REV

MODEL AFFECTED: 214B/214B-1

SUBJECT: **ELEVATOR AND DIRECTIONAL FLIGHT CONTROL BEARINGS, MS27643-4, INSPECTION AND REPLACEMENT OF**

HELICOPTERS AFFECTED: All 214B/214B-1 helicopters serial number 28001 through 28070

COMPLIANCE:

- Part I :** Immediately upon receipt of this ASB.
- Part II:** Inspection for suspect bearings at the next 25 hour inspection following receipt of this bulletin with recurring serviceability inspection of serviceable suspect bearings every additional 25 flight hours until replaced at the next 100 hour inspection, or, one year after receipt of this ASB, which ever comes first.
- Part III:** Inspection for suspect bearings at the next 100 hour inspection following receipt of this bulletin with replacement of serviceable suspect bearings 100 hours after inspection, or one year after receipt of this ASB, whichever occurs first.

DESCRIPTION:

Certain bearing lot numbers manufactured by Schatz Bearing Corp. from October 2006 through January 2009 may contain balls that were manufactured improperly which could lead to bearing degradation. Bearing degradation is detectable in non-boosted flight controls, but difficult to detect in the hydraulically boosted flight controls. Bell Helicopter has identified specific locations in the boosted controls of the 214B/B-1 which may contain bearings with improperly manufactured balls. They are limited to several SUBJECT bearings in the elevator and directional flight control systems.

An inspection is required to determine if a SUBJECT bearing manufactured by Schatz Bearing Corp. is installed in one of the specific locations in the elevator or directional controls. If a suspect Schatz bearing is found it must be replaced in accordance with the Compliance and Accomplishment Instructions of this ASB. Bearings manufactured by Schatz in installations other than those specifically noted in this ASB are acceptable for continued operation per normal serviceability requirements.

SUBJECT uninstalled bearings manufactured by BHT suppliers other than Schatz do not require inspection or replacement as part of this ASB. All SUBJECT spare Schatz bearings delivered by Bell Helicopter, either as detail parts or in assembled components, after January 31, 2009, have been inspected and determined to be serviceable.

Customers who purchased bearings and/or assembled components after September 2006 from sources other than Bell Helicopter should contact those sources to determine if the bearings are part of the suspect lots.

APPROVAL:

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

MANPOWER:

Approximately 3.5 man-hours are required to complete the inspection portion of Parts I, II, and III of this bulletin. Time to accomplish replacement of suspect bearings in Parts II and III, if required, will vary upon the quantity of SCHATZ bearings installed. Man-hours are based on hands-on time, and may vary with personnel and facilities available.

WARRANTY:

Owners / Operators of Bell Helicopters who comply with the instructions in this Bulletin will be eligible to receive a credit for bearings that meet the replacement criteria in this bulletin.

To receive this credit:

- Comply with the instructions contained in this Bulletin no later than the applicable hours or calendar date in the "compliance section" of this ASB.

- Purchase replacement bearing and sleeve as required in the materials section of this bulletin from a Bell approved source.
- Submit an MMIR to the Bell Warranty Department.

Customers who fail to comply with the instructions in this Bulletin within the applicable hours or calendar date are not eligible for the special warranty credit listed above. There is no labor associated with this bulletin.

MATERIAL:

Required Material:

The following material is required for the accomplishment of this bulletin and may be obtained through your Bell Helicopter Textron Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>
MS27643-4	Bearing	As Required
120-013-4A	Sleeve	As Required

Consumable Material:

The following material is required to accomplish this bulletin, however this material is considered consumable (bench stock) material and may not require ordering depending on the operators consumable material stock levels. This material may be obtained through your Bell Helicopter Textron Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>	<u>Reference</u>
MIL-PRF-23377TI,CLC	Primer Kit	A/R	C-204
PD680	Solvent	A/R	C-304
-----	Cheesecloth, Cotton	A/R	C-486

SPECIAL TOOLS:

T101873-13 Ring Staking Tool

WEIGHT AND BALANCE:

Not required

ELECTRICAL LOAD DATA:

Not affected

REFERENCES:

BHT-ALL-SPM, Chapter 9
BHT-214B-MM-1, Chapter 27
BHT-214B-CR&O, Chapter 27
BHT-214B-IPB, Chapter 67
OSN GEN-09-38

PUBLICATIONS AFFECTED:

None affected

ACCOMPLISHMENT INSTRUCTIONS:

Component and Bearing Identification:

1. On the Model 214B/214B-1, Bell has identified 6 applications in the boosted controls where a degraded P/N MS27643-4 bearing can affect proper control operation.

- a. Elevator Controls:

The Bellcrank Assembly P/N 214-001-914-001/-101 has 1 P/N MS27643-4 Bearing installed (Figure 1).

The Bellcrank Assembly P/N 214-001-915-005 has 1 P/N MS27643-4 Bearing installed (Figure 1).

The Bellcrank Assembly P/N 214-001-916-009/-013 has 1 P/N MS27643-4 Bearing installed (Figure 1).

- b. Directional Controls:

The Bellcrank Assembly P/N 214-001-701-001 has 2 P/N MS27643-4 Bearings installed (Figure 2).

The Bellcrank Assembly P/N 214-001-708-001 has 2 P/N MS27643-4 Bearings installed (Figure 2).

The Bellcrank Assembly P/N 214-001-721-001 has 2 P/N MS27643-4 Bearings installed (Figure 2).

2. Installed MS27643-4 bearings manufactured by Schatz Bearing Corporation can be identified by the the word **SCHATZ** and **DSP4** imprinted on the bearing seal retainer on at least one side of the bearing (Figure 3). Uninstalled MS27643-4 bearings will have a Schatz manufacturing lot number marked on the outer race (Figure 3), with MS27643-4 and DSP4-H or L identified on the packaging.

PART I:

Inspection of Bellcrank Assemblies and Bearings in spares stock.

1. Inspect all MS27643-4 bearings installed in the assemblies identified in Component and Bearing Identification section of this ASB.
 - a. Any suspect SCHATZ bearings found must be removed and replaced. Refer to BHT-ALL-SPM for bearing replacement information and procedures.

-NOTE-

Installed bearings with manufacturer identification other than Schatz Bearing Corporation are acceptable for continued operation subject to normal serviceability requirements.

-NOTE-

Schatz bearings installed on components prior to October 2006 are acceptable for continued operation subject to normal serviceability requirements.

- b. If the Bellcrank Assemblies do not have SCHATZ bearings installed, or Schatz bearings were installed prior to October 2006, attach a serviceable tag to the assembly and indicate compliance with this ASB.
2. Spare, uninstalled, Schatz P/N DSP4-H or L bearings with the lot numbers noted in Table 1 are suspect and should not be installed. Please note that not all lots listed were procurable from Bell Helicopter. For bearings that were procured from Bell helicopter, refer to the WARRANTY section of this bulletin. For bearings procured from other sources, refer to the following paragraph.

3. Operators who purchased Schatz bearings and/or assembled components with Schatz bearings installed from sources other than Bell Helicopter after September 2006 should contact those sources to determine if the bearings are, or may be, part of the suspect lots.

PART II:

Inspection of Elevator Control System Bellcrank Assemblies installed on Helicopter

1. Prepare helicopter for maintenance (disconnect battery)
2. Gain access to the elevator control system P/N 214-001-914-001/-101, P/N 214-001-915-005, and P/N 214-001-916-009/-013 Bellcrank Assemblies (Figure 1). Refer to BHT-214B-MM-1 as necessary.
 - a. Disconnect elevator control tubes at each bellcrank location to be inspected; refer to BHT-214B-MM-1. Specific bearings to be inspected are identified on Figure 1.
 - b. Inspect each specific bearing to determine if it is a Schatz manufactured bearing per Figure 3.
 - c. Inspect each specific bearing, regardless of manufacturer, for serviceability paying particular attention to smooth rotation.
 - 1) Bearings found to be rough, ratchety, or otherwise not meeting serviceability criteria must be replaced immediately. Refer to BHT-214B-MM-1 and BHT-ALL-SPM, as applicable, for bellcrank removal and installation and bearing replacement procedures except do not use zinc chromate or water borne (Mil-P-85582) primer, use Mil-P-23377 primer (C-204) only when installing the sleeve and bearing.
 - 2) Schatz manufactured bearings installed after September 2006 and found serviceable remain susceptible to degradation and therefore must be subject to a recurring serviceability inspection, as noted in step 2.c, every **25 flight hours until replaced at the next 100 hour inspection, or, one year after receipt of this ASB, which ever comes first.**

PART III:

Inspection of Directional Control System Bellcrank Assemblies installed on Helicopter

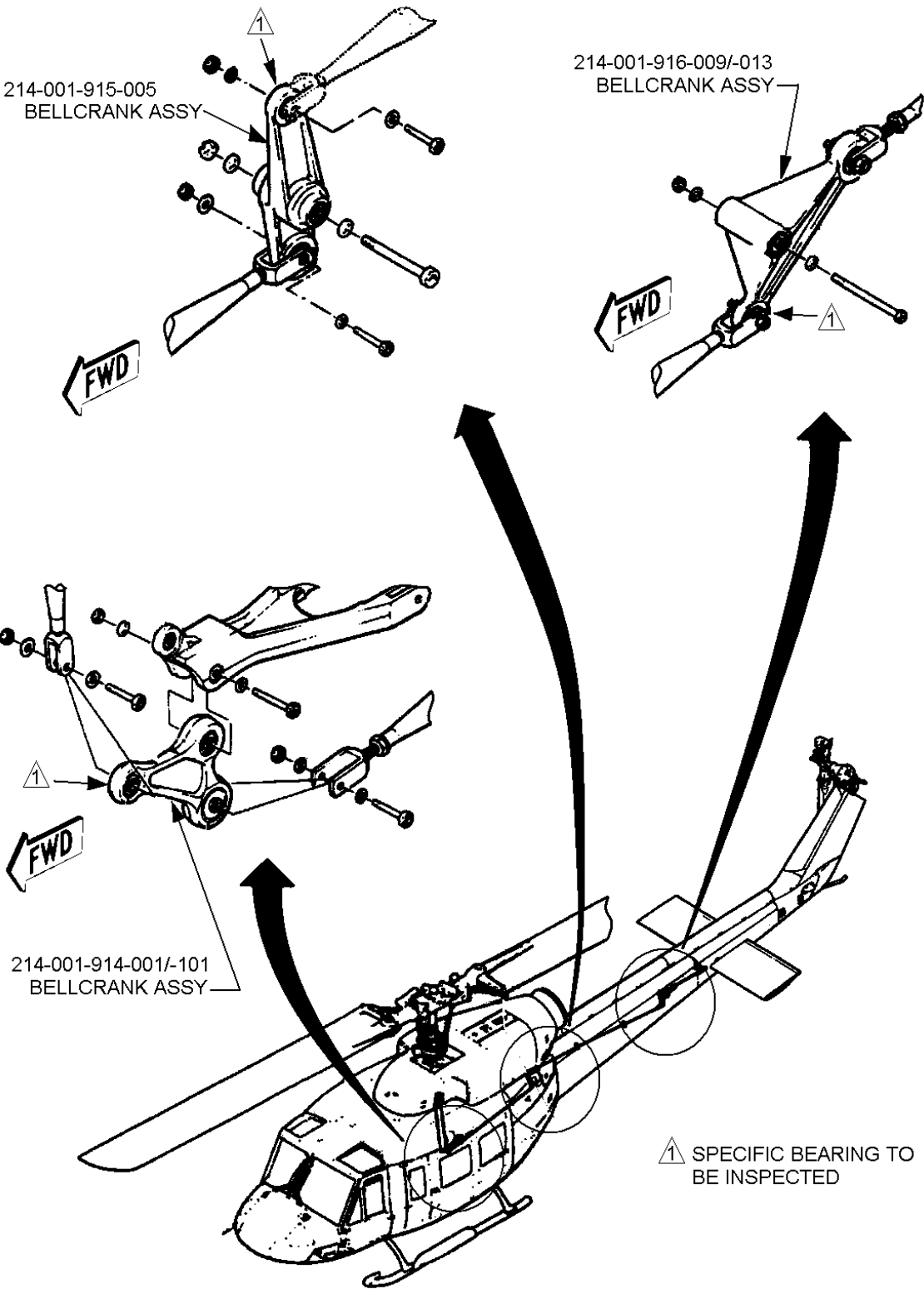
1. Prepare helicopter for maintenance (disconnect battery)

2. Gain access to the directional control system P/N 214-001-701-001, P/N 214-001-708-001, and P/N 214-001-721-001 Bellcrank Assemblies (Figure 2). Refer to BHT-214B-MM-1 as necessary.
 - a. Disconnect control tubes at each bellcrank location to be inspected; refer to BHT-214B-MM-1. Specific bearings to be inspected are identified on Figure 2.
 - b. Inspect each specific bearing to determine if it is a Schatz manufactured bearing per Figure 3).
 - c. Inspect each specific bearing, regardless of manufacturer, for serviceability paying particular attention to smooth rotation.
 - 1) Bearings found to be rough, ratchety, or otherwise not meeting serviceability criteria must be replaced immediately. Refer to BHT-214B-MM-1 and BHT-ALL-SPM, as applicable, for bellcrank removal and installation and bearing replacement procedures except do not use zinc chromate or water borne (Mil-P-85582) primer, use Mil-P-23377 primer (C-204) only when installing the sleeve and bearing.
 - 2) Schatz manufactured bearings installed after September 2006 and found serviceable remain susceptible to degradation and therefore must be **replaced at the next 100 hour inspection, or, one year after receipt of this ASB, which ever comes first.**

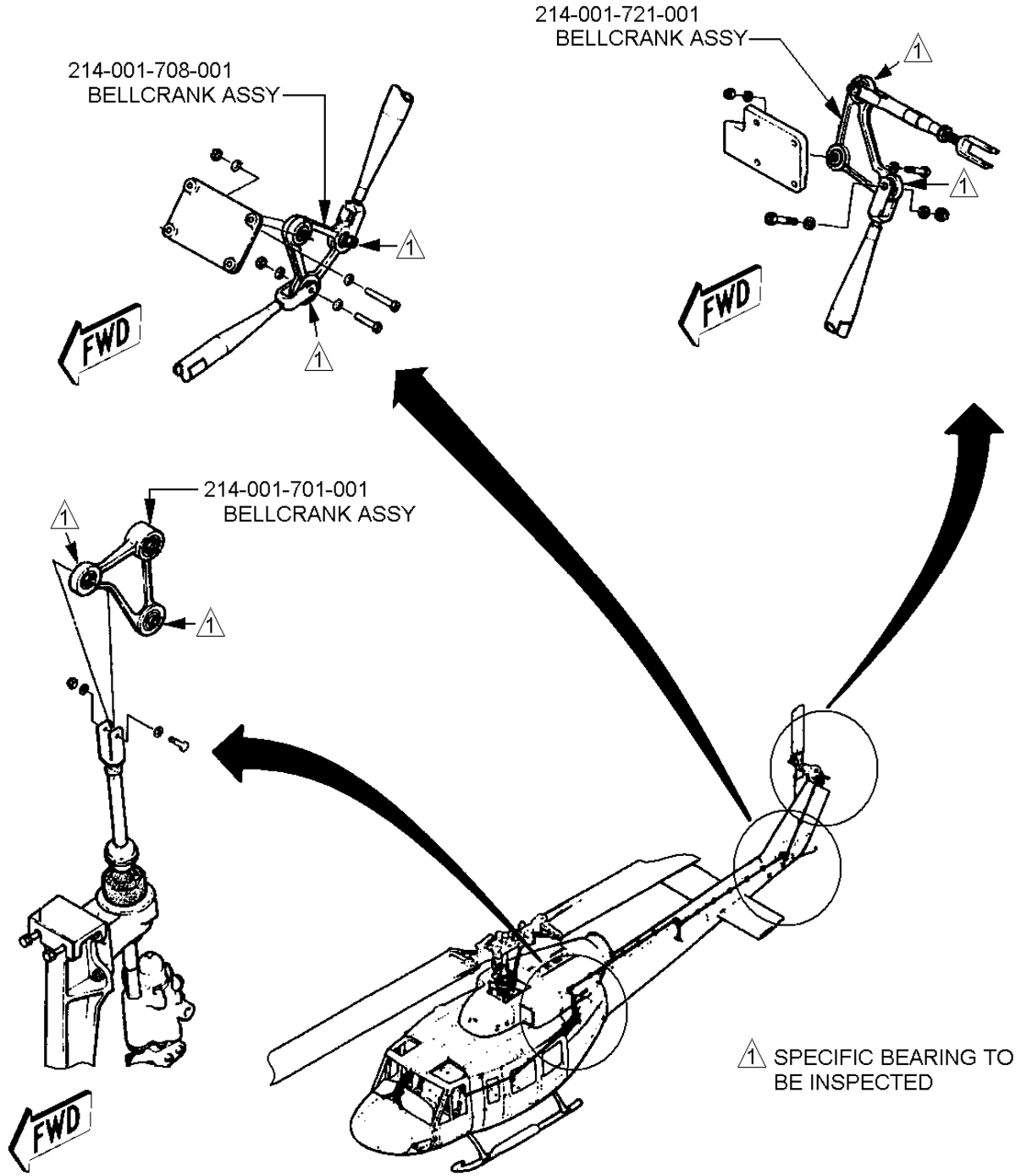
**Suspect Schatz Bearing Corporation
P/N DSP4-H or L (MS27643-4) Bearing Lots**

SCHATZ PART NUMBER	LOT NUMBER
DSP4-H	07J30
	08A03
	08A04
	08A11
	08A16
	08A21
	08D09
	08D10
	08D14
	08D21
	08E06
	08E29
	08F05
	08F06
	08F12
	08F17
	08F23
	08F24
	08F25
	08I24
	08J15
↓	08J17
DSP4-L	08A02
	08A07
	08B05
	08D04
	08F13
↓	08I03

Table 1



ELEVATOR CONTROLS
FIGURE 1



DIRECTIONAL CONTROLS
FIGURE 2

LOT NUMBER MARKED ON OUTER RACE



FIGURE 3