

# **Bell Helicopter** **TEXTRON**

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09-25-00

**TO: All Model 214ST Owners/Operators**

**SUBJECT: REVISION "A" TO TECHNICAL BULLETIN 214ST-91-119:  
MAIN TRANSMISSION ASSEMBLY P/N 214-040-002,  
CONFIGURATION CHANGE AND UPGRADE**

Technical Bulletin 214ST-91-119 dated 1-16-91 has been revised to update configuration notes and references.

**TECHNICAL BULLETIN**  
**Bell Helicopter** **TEXTRON**

A Subsidiary of Textron Inc.

No. 214ST-91-119

Date 1-16-91

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DATE 09-25-2000

REV A

**MODEL AFFECTED:** 214ST

**SUBJECT:** MAIN TRANSMISSION ASSEMBLY P/N 214-040  
-002, CONFIGURATION CHANGE AND  
UPGRADE

**HELICOPTERS AFFECTED:** Model 214ST Helicopters s/n 28101 through 28200.

**COMPLIANCE:** At Customer's Option

**DESCRIPTION:**

This bulletin provides information to operators that have a requirement to upgrade the main transmission assembly to the latest configuration. The helicopter certified design and spare parts configuration at time of delivery were as follows:

<u>Helicopter Serial No.</u>	<u>Main Transmission Assembly</u>
28101-28149	214-040-002-103
Spare Configuration	214-040-012-111
28150-28200	214-040-012-115
28201-Sub and Spares	214-040-012-119

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The use of an earlier dash number transmission assembly on a later helicopter serial number is not authorized and places the helicopter out of conformance with approved FAA type design. The use of a later dash number transmission assembly on an earlier helicopter serial number is approved.

Tables 1, 2, 3, and 4 list the components that comprise the transmission assembly dash number configuration differences. A dash number identification change on the transmission assembly data plate is required when upgrading an assembly configuration. Historical records must be annotated with the new part numbers and retirement times, as applicable.

**APPROVAL:**

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

**MANPOWER:**

No man-hour requirements are stated, as the length of time for upgrade will vary with the upgrade required. Upgrades at time of overhaul should result in no addition to man-hour requirements normally incurred.

**MATERIALS:**

Reference ACCOMPLISHMENT INSTRUCTIONS. Standard replacement parts for overhaul are not included unless they are affected by a configuration difference. Materials will be available through your Bell Helicopter Supply Center.

**SPECIAL TOOLS:**

Refer to Model 214ST Component Repair and Overhaul Manual, Chapter 63.

**WEIGHT AND BALANCE:**

Replacement of the P/N 214-040-761 Ring Gear Case Assembly with the P/N 214-040-361-101 Ring Gear Case Assembly will affect helicopter weight and balance. Refer to T.B. 214ST-00-163, weight and balance section.

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**ELECTRICAL LOAD DATA:**

Not affected

**REFERENCES:**

BHT-214ST-IPB Illustrated Parts Breakdown  
BHT-214ST-CR&O Component Repair and Overhaul  
ASB 214ST-89-49, Revision B, dated 4-10-90, "Transmission External Oil Filter Bracket, P/N 214-040-599-101/-111/-121 Replacement Of".  
T.B. 214ST-85-51, dated 5-2-85, "Improved Oil Pressure Transmitter, P/N 222-375-077-111, Introduction Of".

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- T.B. 214ST-85-56, dated 6-18-85, "Improved Transmission Oil Filter Support Bracket, P/N 214-040-599-111, Installation Of." **(Cancelled by ASB 214ST-89-49)**
- T.B. 214ST-90-113, dated 10-3-90, "3 Micron Transmission External Oil Filter Assembly, P/N 214-040-760-101, Installation Of".
- T.B. 214ST-95-145, Revision A, dated 6-1-95, "Introduction of Improved Spider, P/N 214-040-357-101".
- T.B. 214ST-00-163, dated 6-14-00, "Introduction of New Transmission Ring Gear Case Assembly, P/N 214-040-361-101".

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**PUBLICATIONS AFFECTED:**

None affected

**ACCOMPLISHMENT INSTRUCTIONS:**

1. Disassemble, inspect, and assemble the transmission assembly in accordance with Chapter 63 of BHT-214ST-CR&O.
2. Upgrading the transmission assembly to a later configuration will require incorporating parts as shown in Tables 1, 2, 3, and 4. Parts listed are only those that differ from one configuration to another or which are affected by spare parts replacements. All parts that are to be retained in service shall be submitted to normal overhaul inspections to determine serviceability.
3. The upgraded transmission assembly must have the data plate and historical service record card reidentified to the new part number. The suffix "FM" will be added after the part dash number to indicate "Field Modified". Using a vibrating stylus, line through existing part dash number and mark new dash number + FM adjacent to original dash number. **The serial number of a field modified part will not be altered or changed.**

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Example: Upgrade the Model 214ST transmission assembly P/N 214-040-002-103 to the -119 configuration. Reidentify transmission assembly data plate and historical service record to new part number: 214-040-002-~~103~~-119FM

Retain existing serial number.

**TABLE 1 - MODEL 214ST TRANSMISSION CONFIGURATIONS**

<u>PART NUMBER</u>	<u>NOMENCLATURE</u>	<u>CONFIGURATION/QUANTITY</u>				<u>NOTES</u>
214-040-002	Transmission	-103				(1)
			-111			(2)
				-115		(3)
					-119	
214-040-007-101	Upper Transmission	1	1			See Table 2
214-040-007-105	Upper Transmission			1		See Table 2
214-040-007-107	Upper Transmission				1	See Table 2
214-040-008-101	Lower Transmission	1				See Table 4
214-040-008-103	Lower Transmission		1	1	1	See Table 4
214-040-510-001	External Filter Assy (10 micron)	1				
214-040-636-101	Tube Assy	1				(4)(5)
214-040-637-101	Tube Assy	1				(5)
AN833-12D	Elbow	2				(5)
AN924-12D	Nut	2				(5)
M983248/1-9122	Packing	2				(5)
214-040-760-101	External Filter Assy (3 Micron)		1	1	1	
214-040-666-101	Tube Assy		1	1	1	
214-040-667-101	Tube Assy		1	1	1	
AN919-23D	Reducer		2	2	2	
M83248/1-916	Packing		2	2	2	
110-091-11D	Elbow		2	2	2	

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TABLE 2 - MODEL 214ST TRANSMISSION CONFIGURATIONS (cont'd)

<u>PART NUMBER</u>	<u>NOMENCLATURE</u>	<u>CONFIGURATION/QUANTITY</u>			<u>NOTES</u>
		-101	-105	-107	
214-040-007	Upper Transmission	-101	-105	-107	
214-040-019-101	Input Quill Assy	1	1	1	
214-040-036-101	Gear	1	1	1	(6)(7)
214-040-027-101	Spiral Bevel Gear Quill	1	1	1	
214-040-054-001	Gear Assy	1	1	1	(8)(9)(10)
214-040-115-101	Bearing	1	1	1	(11)
214-040-028-103	Lower Planetary Assy	1	1	1	
214-040-034-001	Gear	4	4	4	(12)
214-040-080-101	Spider	1	1	1	(13)
214-040-108-001	Roller Set	4	4	4	(14)
214-040-109-001	Race	4	4	4	(15)
214-040-112-101	Bearing	4	4	4	(16)
214-040-029-003	Planetary Assy	1			(17)See Table 3
214-040-029-101	Planetary Assy		1	1	(18)See Table 3
214-040-029-103	Planetary Assy				See Table 3
214-040-030-003	Sun Gear	1	1	1	(19)
214-040-761-005	Ring Gear Case Assy	1	1		(20)(21)(22)
214-040-361-101	Ring Gear Case Assy			1	
222-375-019-005	Pressure Transmitter	1			(23)
222-375-077-111	Pressure Transmitter		1	1	

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**TABLE 3 - MODEL 214ST TRANSMISSION CONFIGURATIONS (cont'd)**

<u>PART NUMBER</u>	<u>NOMENCLATURE</u>	<u>CONFIGURATION/QUANTITY</u>			<u>NOTES</u>
214-040-029	Planetary Assy	-003	-101	-103	
214-040-031-001	Pinion	6			
214-040-031-101	Pinion		6		(24)
214-040-031-103	Pinion			6	(25)
214-040-077-007	Carrier	1			(26)
214-040-077-101	Carrier		1	1	
214-040-104-001	Roller Set	6	6	6	(27)
214-040-105-001	Race	6	6	6	(28)

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**TABLE 4 - MODEL 214ST TRANSMISSION CONFIGURATIONS (cont'd)**

<u>PART NUMBER</u>	<u>NOMENCLATURE</u>	<u>CONFIGURATION/QUANTITY</u>		<u>NOTES</u>	
214-040-008	Lower Transmission	-101	-103		
214-040-023-101	Tailrotor Quill Assy	1	1		
214-040-048-001	Gear	1	1	(29)(30)	
214-040-825-001	Seal	1	1	(31)	
214-040-046-001	Helical Gear	1	1	(32)(33)	A
214-040-047-005	Spiral Bevel Gear	1	1	(34)(35)	
214-040-051-001	Hyd Spur Gear (Drive)	1	1	(36)	
214-040-052-001	Spur Idle Gear	1	1	(37)	
214-040-053-001	Hyd Spur Gear (Driven)	1	1	(38)	
214-040-599-101	Bracket	1			
214-040-599-111	Bracket		1	(39)(40)(41)	
214-040-599-139	Bracket		1	(40)(41)	

NOTES

- (1) Superseded by P/N 214-040-002-111.
- (2) Superseded by P/N 214-040-002-115.
- (3) Superseded by P/N 214-040-002-119.
- (4) Superseded by P/N 214-040-510-105.
- (5) Refer to TB 214ST-90-113 for replacement of 10 micron external oil filter installation with a 3 micron external oil filter.
- (6) Superseded by P/N 214-040-036-103. (7)
- (7) Superseded by P/N 214-040-036-107.
- (8) Superseded by P/N 214-040-054-101. (9)
- (9) Superseded by P/N 214-040-054-105. (10)
- (10) Superseded by P/N 214-040-054-111.
- (11) P/N 214-040-115-001 Bearing is alternate.
- (12) Superseded by P/N 214-040-034-101.
- (13) Superseded by P/N 214-040-357-101. Reference TB 214ST-95-145.
- (14) P/N 214-040-108-003 Roller Set is alternate. Individual rollers are not interchangeable and must not be mixed between the –001 and –003 Roller Sets.
- (15) P/N 214-040-109-005 Race is alternate. Do not mix –001 and –005 Races in the same planetary assembly.
- (16) P/N 214-040-112-001 Bearing is alternate. Do not mix –001 and –101 bearings in the same planetary assembly.
- (17) Superseded by P/N 214-040-029-101. (18)
- (18) Superseded by P/N 214-040-029-103.
- (19) Superseded by P/N 214-040-030-101
- (20) Superseded by P/N 214-040-761-105 (21). Reference TB 214ST-00-163.
- (21) Superseded by P/N 214-040-761-111 (22). Reference TB 214ST-00-163.
- (22) Superseded by P/N 214-040-361-101. Refer to WEIGHT AND BALANCE section of this technical bulletin for additional information.
- (23) Superseded by P/N 222-375-077-111. Reference TB 214ST-85-51.
- (24) Superseded by P/N 214-040-031-101. (25)
- (25) Superseded by P/N 214-040-031-103
- (26) Superseded by P/N 214-040-077-101.
- (27) P/N 214-040-104-003 Roller Set is alternate. Individual rollers are not interchangeable and must not be mixed between the –001 and –003 Roller Sets.
- (28) P/N 214-040-105-005 Race is alternate. Do not mix –001 and –005 Races in the same planetary assembly.
- (29) Superseded by P/N 214-040-048-101. (30)
- (30) Superseded by P/N 214-040-048-103.
- (31) Superseded by P/N 209-340-260-101.
- (32) Superseded by P/N 214-040-046-101. (33)
- (33) Superseded by P/N 214-040-046-105.
- (34) Superseded by P/N 214-040-047-101. (35)
- (35) Superseded by P/N 214-040-047-103.
- (36) Superseded by P/N 214-040-051-101.
- (37) Superseded by P/N 214-040-052-101.
- (38) Superseded by P/N 214-040-053-101.

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**NOTES (cont'd)**

- (39) Superseded by P/N 214-040-599-111 (40). Reference ASB 214ST-89-49.
- (40) Superseded by P/N 214-040-599-121 (41). Reference ASB 214ST-89-49.
- (41) Superseded by P/N 214-040-599-139. Reference ASB 214ST-89-49.

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