

TECHNICAL BULLETIN
Bell Helicopter **TEXTRON**

A Subsidiary of Textron Inc.

No. 214-03-94

Date 04-04-03

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DATE
REV

MODEL AFFECTED: 214B/214B-1

SUBJECT: **REPLACEMENT OF P/N 214-075-153-007
NICKEL-CADMIUM BATTERY**

HELICOPTERS AFFECTED: All Model 214B and 214B-1 Helicopters

COMPLIANCE: At Customer's Option

DESCRIPTION:

The manufacturer of the P/N 214-075-153-007 Battery, Eagle-Picher Technologies, has ceased manufacture and support of nickel-cadmium (NICAD) batteries.

As a result, a replacement battery installation has been approved for use in the 214B/B-1 helicopters. To install the replacement batteries, manufactured by SAFT, new tie-down rods are required to accommodate the larger height of the new battery and a small wiring termination change is required for the battery temperature sensor connection.

APPROVAL:

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

MANPOWER:

Approximately 3.0 man-hours are required to complete this bulletin. Man-hours are based on hands-on time, and may vary with personnel and facilities available.

MATERIALS:

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>
AN316-4R	Nut	4
MS35425-39	Wing Nut	4
204-075-161-005	Rod	4
4076-5	Battery	2

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>
MS20995C32 or AS100028	Lockwire	AR	C-405

SPECIAL TOOLS:

P/N MS24256R20 Removal Tool or equivalent.

P/N MS24256A20 Insertion Tool or equivalent.

WEIGHT AND BALANCE:

See Accomplishment Instructions.

ELECTRICAL LOAD DATA:

Not affected

REFERENCES:

BHT-214B-IPB Illustrated Parts Breakdown, Chapter 96

BHT-214B-MM-1 & -2 Maintenance Manual, Chapters 8 and 96

BHT-ELEC-SPM Electrical Standard Practices Manual

ASB 214-83-22, Battery Temperature Sensor, Rewiring Of, dated 9-26-83

PUBLICATIONS AFFECTED:

BHT-214B-IPB Illustrated Parts Breakdown, Chapter 96
BHT-214B-MM-2 Maintenance Manual, Chapter 96

ACCOMPLISHMENT INSTRUCTIONS:

PART 1 – BATTERY INSTALLATION

CAUTION

This procedure replaces two P/N 214-075-153-007 Batteries with two SAFT P/N 4076-5 Batteries. Intermixing of one P/N 214-075-153-007 Battery with one P/N 4076-5 Battery is not approved.

NOTE

Prior to reinstallation of parts which are not to be discarded as part of this procedure, inspect each for serviceability and replace as necessary.

1. Refer to BHT-214B-MM-2, Chapter 96, paragraph 96-28 and remove both existing P/N 214-075-153-007 Batteries.
2. Refer to Figure 1; remove and discard four existing P/N MS35426-14 Wing nuts (item 6). Remove four existing washers (item 5), four existing channels (item 4), and retain for reinstallation if serviceable.
3. Loosen existing jam nut (item 2) and remove existing P/N 209-075-226-013 Rod (item 3) from each of the four tie down assembly rod ends (item 1). Discard rods and jam nuts.
4. Install one new jam nut, P/N AN316-4R (item 2) on the long threaded portion of each new rod P/N 204-075-161-005 (item 3).
5. Loosely install long threaded portion of a P/N 204-075-161-005 Rod (item 3) into each of the four tie down assembly rod ends (item 1).
6. Locate two SAFT P/N 4076-5 Batteries (item 7) in position and loosely install tie down assemblies to the tie down ears of each battery using channel (item 4), washer (item 5), and new wing nuts, P/N MS35425-39 (item 6).
7. Permanently secure batteries with tie down rod assemblies such that a minimum of two full threads are exposed above the item 6 wing nut and a minimum of four full threads engage the item 1 rod end. Tighten jam nuts (item 2) and wing nuts (item 6) on each tie down rod assembly. Secure the two wing nuts on each battery's tie

down rod assemblies to each other with lockwire (P/N MS20995C32/AS100028), item 10.

8. Reinstall vent lines (item 8) at vent ports on each battery with clamps (item 9).
9. Install battery connector (item 11) to each P/N 4076-5 battery (item 7).

PART 2 – BATTERY TEMPERATURE SENSOR WIRING

NOTE

The WAS configuration is based on previous compliance with ASB 214-83-22

1. Refer to Figure 2 for the WAS and NOW configuration.

NOTE

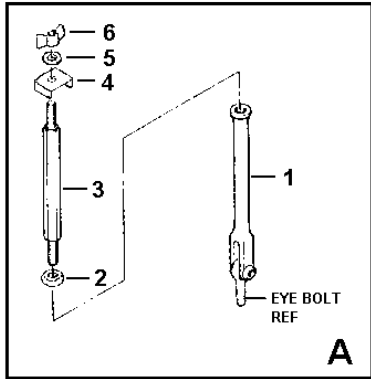
The battery temperature sensor connectors are MS3126E10-6S and contacts are front release. Use tool MS24256R20 for removal and tool MS24256A20 for insertion (contact P/N M39029/32-259).

2. From Battery 1 temperature sensor connector [2S8P1]:
 - a. Remove wire W11A22 from cavity E and insert into cavity A.
 - b. Remove wire W112A22N from cavity C.
 - c. Remove wire W11B22 from cavity B and insert into cavity C.
 - d. Insert wire W112A22N into cavity B.
 - e. Remove wire W114A22N from cavity F and insert into cavity D.
 - f. Do not reconnect connector at this time.
3. From Battery 2 temperature sensor connector [2S9P1]:
 - a. Remove wire W45A22 from cavity E and insert into cavity A.
 - b. Remove wire W45B22 from cavity B.
 - c. Remove wire W113A22N from cavity C and insert into cavity B.
 - d. Insert wire W45B22 into cavity C.

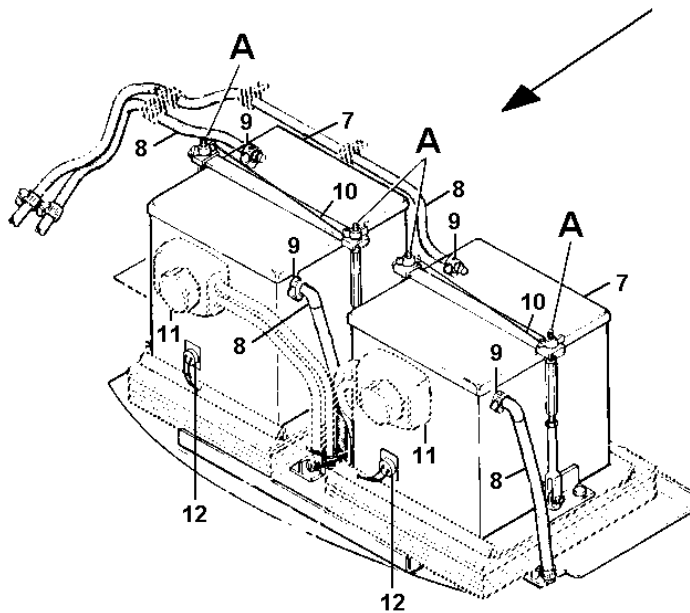
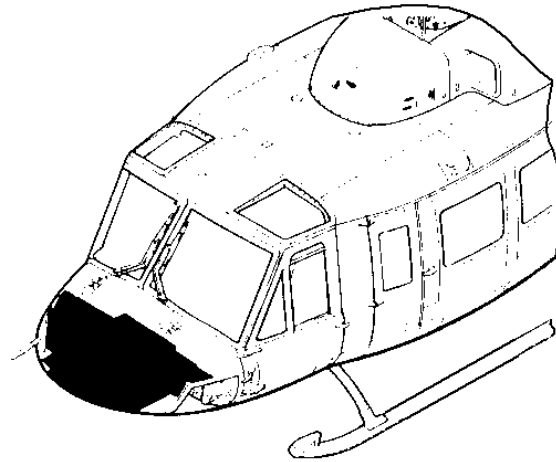
- e. Remove wire W115A22N from cavity F and insert into cavity C.
 - f. Do not reconnect connector at this time.
4. Apply power to annunciator panel by positioning BATTERY 1 and BATTERY 2 switch to "ON".
 5. At BATTERY 1 temperature sensor connector, place jumper wire across pins C and D. BATTERY 1 HOT segment in annunciator panel should illuminate. Remove jumper wire, segment should go out.
 6. Place jumper wire across pins A and B. BATTERY 1 TEMP segment in annunciator panel should illuminate. Remove jumper wire, segment should go out. Connect temperature sensor connector (item 12) to number 1 battery.
 7. At BATTERY 2 temperature sensor connector, place jumper wire across pins C and D. BATTERY 2 HOT segment in annunciator panel should illuminate. Remove jumper wire, segment should go out.
 8. Place jumper wire across pins A and B, BATTERY 2 TEMP segment in annunciator panel should illuminate. Remove jumper wire, segment should go out. Connect temperature sensor connector (item 12) to number 2 battery.
 9. Position BATTERY 1 and BATTERY 2 switch to "OFF".

PART 3 – WEIGHT AND BALANCE

Each SAFT P/N 4076-5 Battery will weigh approximately 18 pounds more than the P/N 214-075-153-007 Battery. After Parts 1 and 2 of this bulletin are complete but before returning to service, weigh the helicopter, determine the actual center of gravity, and adjust ballast as necessary to ensure helicopter is within acceptable center of gravity limits (refer to BHT-214B-MM-1, Chapter 8).



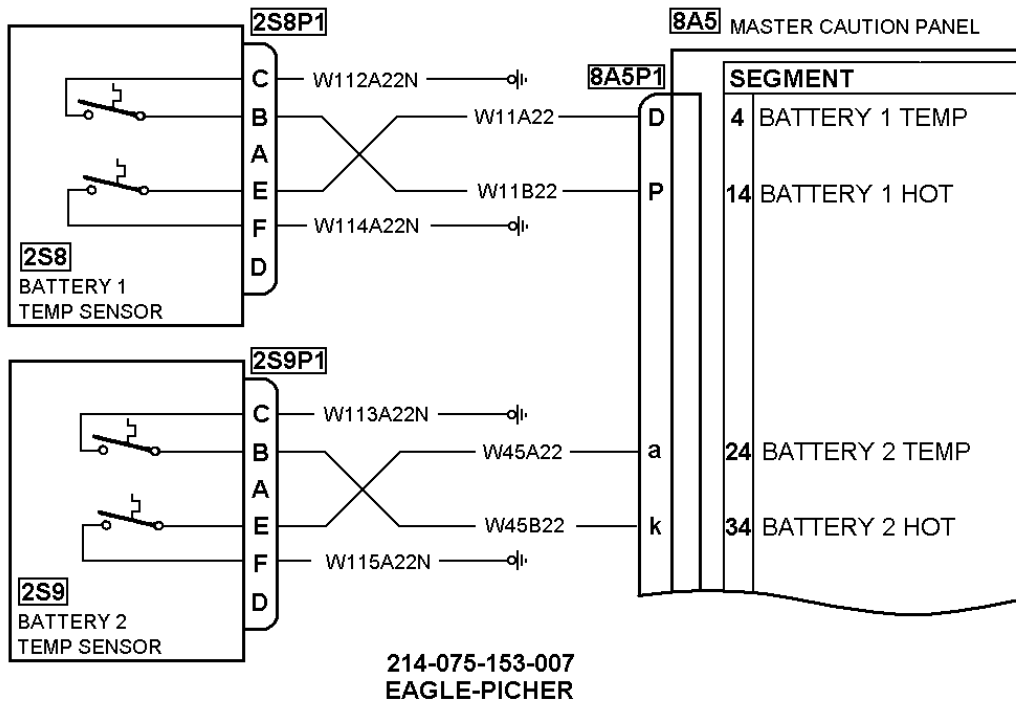
TIE DOWN ROD ASSEMBLY
DETAIL



1. ROD END
2. JAM NUT (P/N AN316-4R; DISCARD OLD NUT, INSTALL NEW NUT)
3. ROD (REMOVE P/N 209-075-226-013, INSTALL P/N 204-075-161-005)
4. CHANNEL
5. WASHER
6. WING NUT (REMOVE MS35426-14, INSTALL MS35425-39)
7. BATTERY (REMOVE 214-075-153-007, INSTALL P/N 4076-5)
8. VENT TUBE
9. CLAMP
10. LOCKWIRE (P/N MS20995C32 OR AS100028)
11. BATTERY CONNECTOR
12. TEMP SENSOR CONNECTOR

FIGURE 1

WAS
POST ASB 214-83-22



NOW

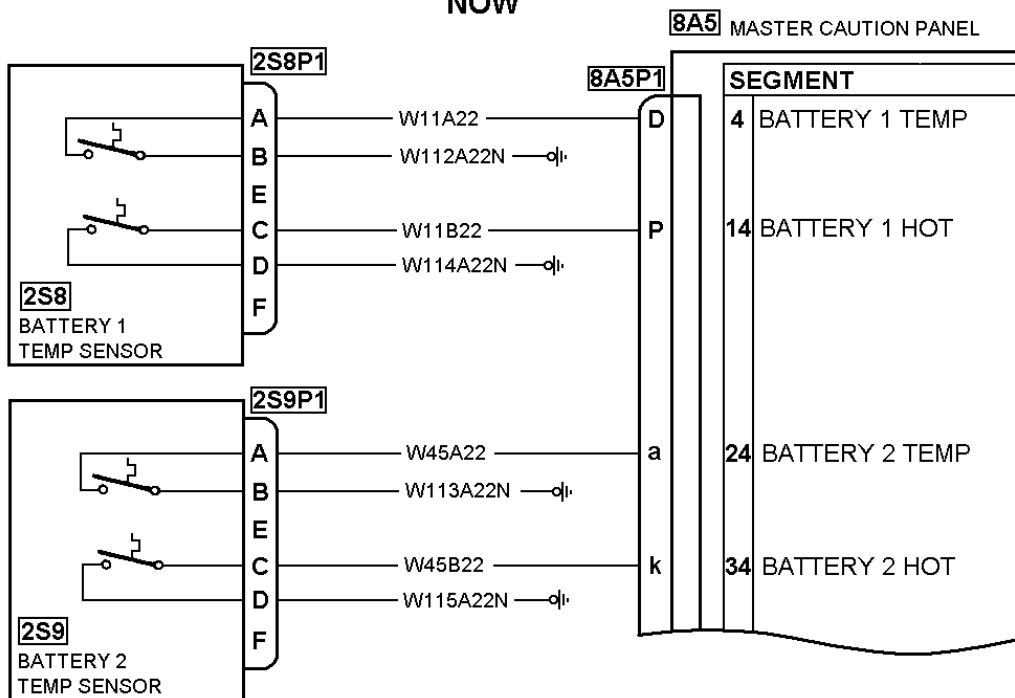


FIGURE 2