

TECHNICAL BULLETIN

Bell Helicopter **TEXTRON**

A Subsidiary of Textron Inc.

No. 230-00-27

Date 10-05-00

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DATE
REV

MODEL AFFECTED: 230

SUBJECT: BATTERY RELAY (2K12), UPGRADE OF

HELICOPTERS AFFECTED: All Model 230 Helicopters

COMPLIANCE: At Customers Option

DESCRIPTION:

Bell Helicopter has received field reports of inadvertent tripping off-line of the battery relay, following a start abort or a dry motoring run. This bulletin gives instructions for replacing the battery relay with a new relay, P/N SX7EJ10, which incorporates improved trip logic circuitry.

APPROVAL:

The engineering design aspects of this bulletin are Transport Canada approved.

MANPOWER:

Approximately 2.0 man-hours are required to complete this bulletin. Man-hours are based on hands-on time, and may vary with personnel and facilities available.

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>
140-039-20	Wire	24 inches
222-075-049-111	Bracket	1
222-075-152-147	Bus Bar	1
230-704-001-105	Cable Assembly	1
230-704-001-107	Cable Assembly	1
230-704-001-115	Bracket	1
30-014-2A	Circuit Breaker	1
31-065-1CB17	Decal	1
MS21042L08	Nut	2
MS21042L3	Nut	1
MS21919WDG2	Clamp	1
MS21919WDG4	Clamp	1
MS25036-103	Terminal	2
MS27039-0809	Screw	1
MS27039-0813	Screw	1
MS27039-1-08	Screw	1
MS27039-1-48	Screw	4
MS35338-42	Washer	2
MS35650-382	Nut	1
NAS1149D0332J	Washer	5
NAS1149DN832J	Washer	3
NAS620-8	Washer	2
SX7EJ10	Relay	1

The following wires will also be required and should be locally fabricated using wire P/N 140-039-20.

<u>Wire Number</u>	<u>Length</u>	<u>Wire Spec</u>
P226A20	24 inches	M22759/41-20-9

Consumable Material:

The following material is required for the accomplishment of this bulletin, however this material is considered consumable (bench stock) material and may not require ordering depending on the operator's 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>
3950	Sealer	1	C-349

SPECIAL TOOLS:

None required

WEIGHT AND BALANCE:

Not affected

ELECTRICAL LOAD DATA:

Not affected

REFERENCES:

BHT-230-MM-12

PUBLICATIONS AFFECTED:

BHT-230-MM-10
BHT-230-MM-12

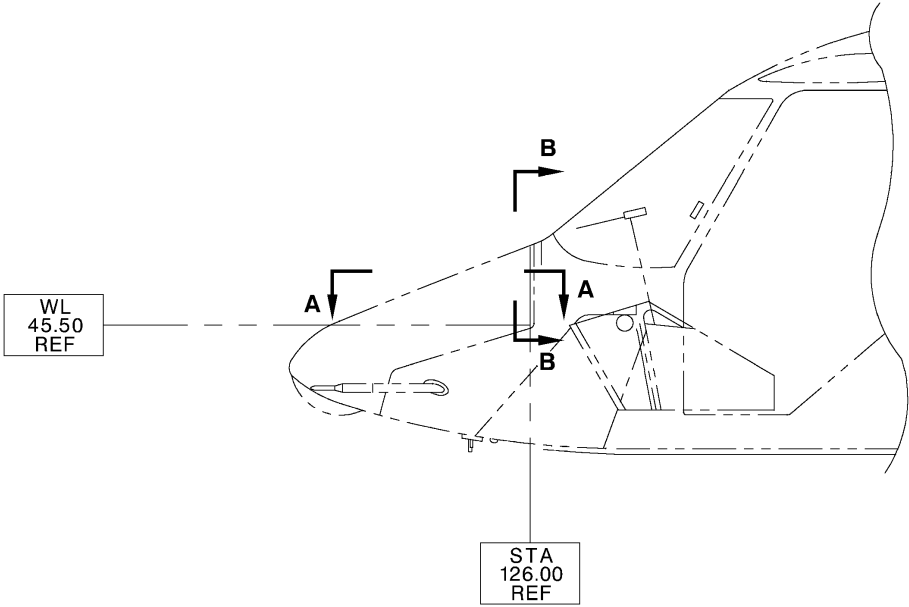
ACCOMPLISHMENT INSTRUCTIONS:

Refer to Figure 1 and Figure 2

1. Prepare helicopter for maintenance.
2. Remove all electrical power and disconnect the battery.
3. Locate emergency bus diode (2CR11) at station 128.00, WL 54.10, BL 5.6L (approximately). Remove the cover from the diode block. (View B-B).
4. Disconnect and remove diode (2CR11) from the mounting bracket, 222-075-015-001. Retain the diode and mounting hardware. (View C-C).
5. Remove the mounting bracket, 222-075-015-001. Discard the bracket and mounting hardware.
6. Install the new mounting bracket, 430-704-001-115, using the new hardware. Install as shown in Figure 1.
7. Reinstall diode (2CR11) using existing mounting hardware.

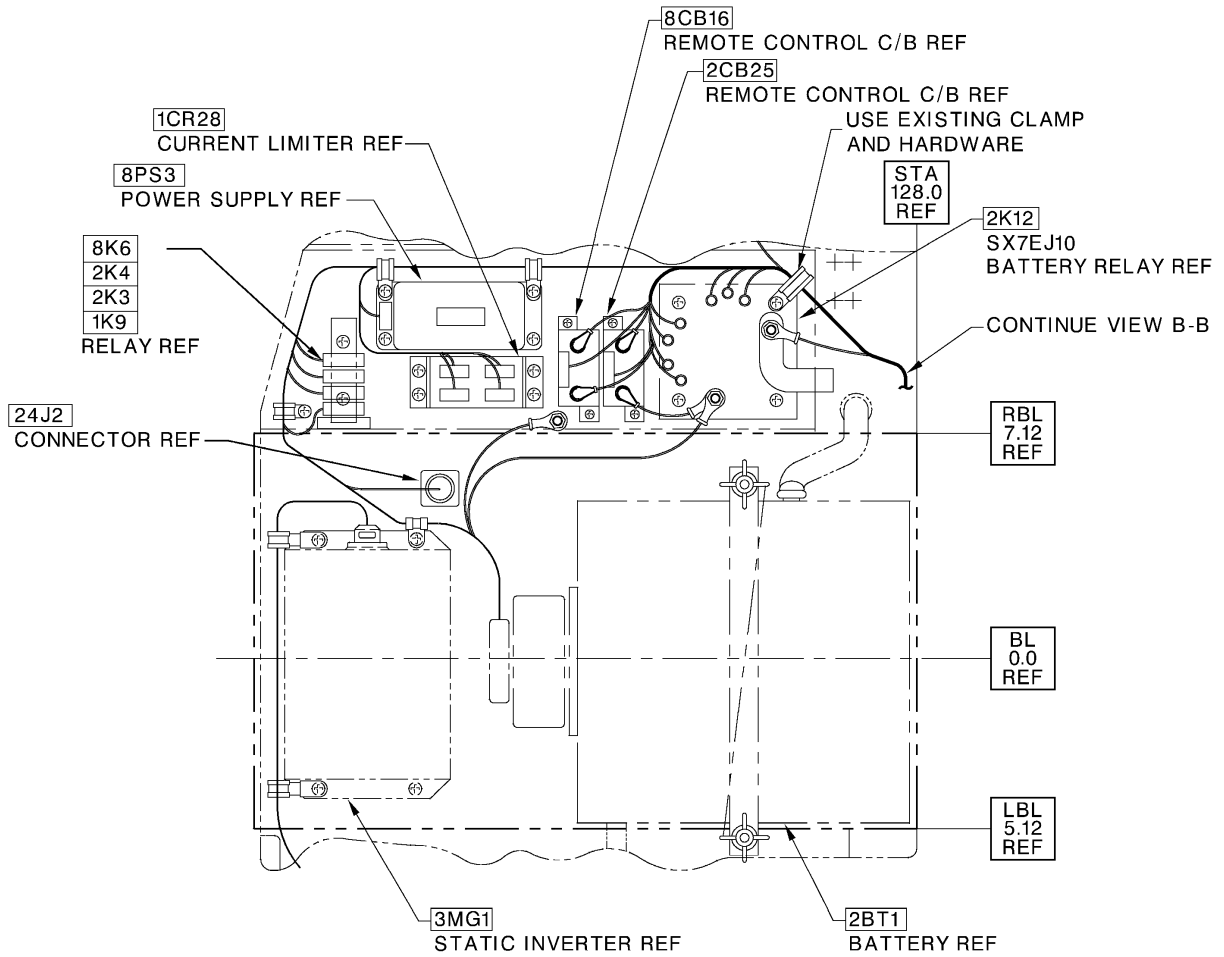
8. Locate bracket, 222-075-049-103, at station 128.00, WL 54.10, BL 0.00. Verify if a spare circuit breaker mounting hole is available. (View B-B).
9. If a circuit breaker hole is not available, remove bracket , P/N 222-075-049-103, and discard. Install new bracket, P/N 222-075-049-111, using existing hardware.
10. Install new circuit breaker, P/N 30-014-2A, on the circuit breaker mounting bracket.
11. Peel back a portion of the protective liner from the adhesive backing of the new decal, P/N 31-065-1CB17. Align the decal on the circuit breaker mounting bracket, making sure that the identification can be seen after the new circuit breaker is installed. Press the peeled section of the decal to the bracket surface with a firm finger pressure. Continue to peel off the protective liner and apply finger pressure until the decal is securely applied.
12. Seal all edges of the decal using edge sealer (C-349).
13. Connect new wire, P/N 230-704-001-105, (P82D12) to the new circuit breaker. Route the wire, following existing wiring to the diode (2CR11) mounting bracket. Connect the new wire to the diode mounting bracket, using washer, P/N NAS1149DN832J, washer, P/N MS35338-42, and nut, P/N MS21042L08. (View B-B). Replace the diode block cover, removed at step 3.
14. Connect new wire, P/N 230-704-001-107, (P361A18) to the new circuit breaker. Route the wire to terminal A1 of the battery relay. Clamp the wire in place. (View B-B).
15. Gain access to battery relay (2K12), located in the nose at station 120.00, BL 8R.
16. Identify and disconnect wires from the battery relay (2K12).
17. Remove bus bar, P/N 222-075-152-129, connected between battery relay (2K12) terminal BUS and external relay (2K1) terminal A2.
18. Remove battery relay (2K12), P/N A-722XTA, and discard hardware.
19. Install new battery relay, P/N SX7EJ10, using qty 4 screw, P/N MS27039-1-48, and qty 4 washer, P/N NAS1149D0332J.
20. Install new bus bar, P/N 222-075-152-147, between battery relay (2K12) terminal BUS and external relay (2K1) terminal A2.

21. Crimp a terminal, P/N MS25036-103, on to each end of new wire P226A20. Connect the wire, P226A20, between terminal 14 and terminal A2 of the battery relay (2K12).
22. Connect new wire, P361A18, to terminal A1 of the battery relay (2K12).
23. Reconnect all disconnected wires, removed at step 16. Refer to Figure 2 for wiring detail.
24. Carry out a functional test of the battery power system. (BHT-230-MM-10).
25. Make a log book entry showing compliance with this bulletin.



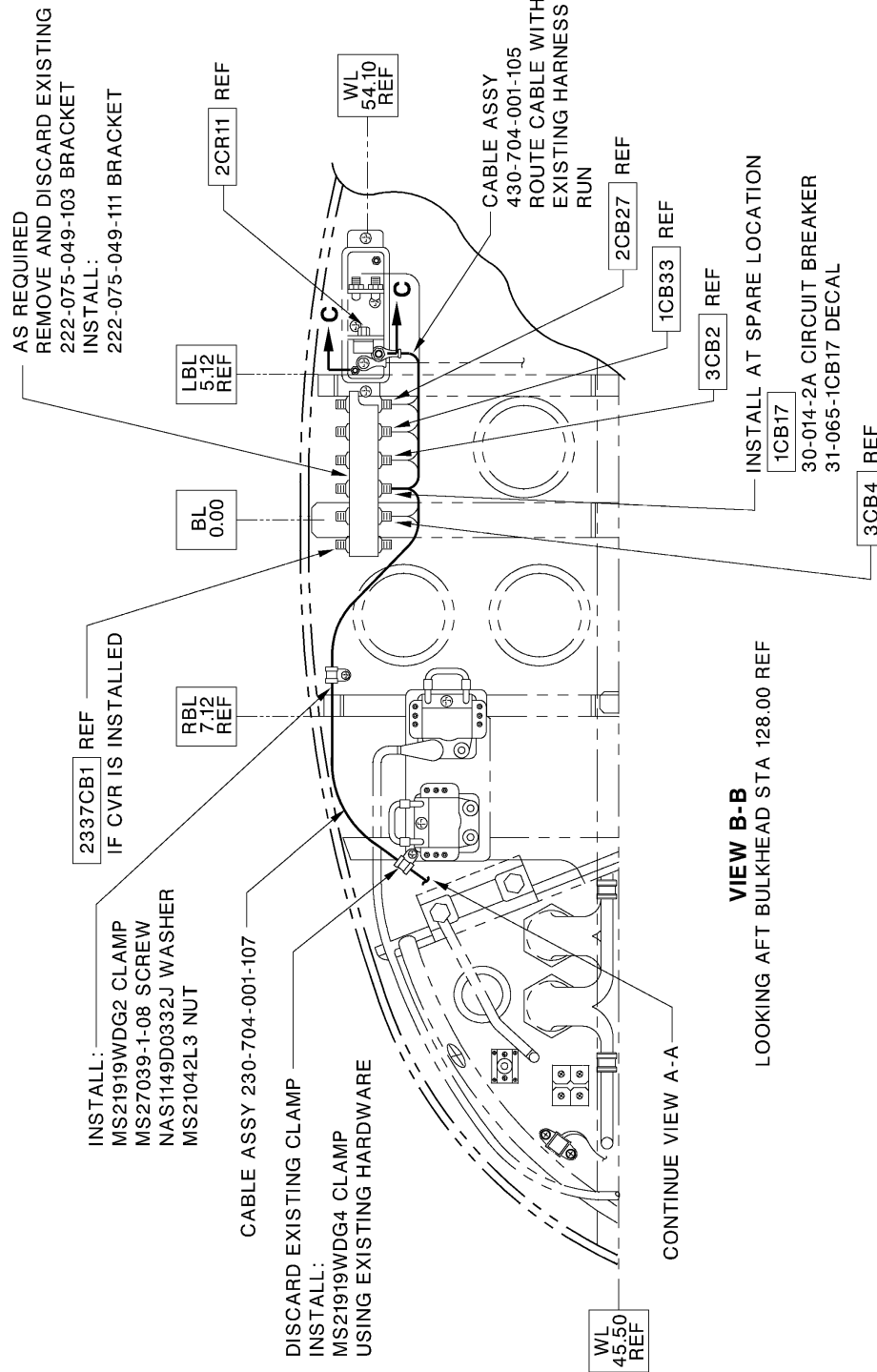
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FIGURE 1
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VIEW A-A
LOOKING DOWN ON NOSE COMPARTMENT

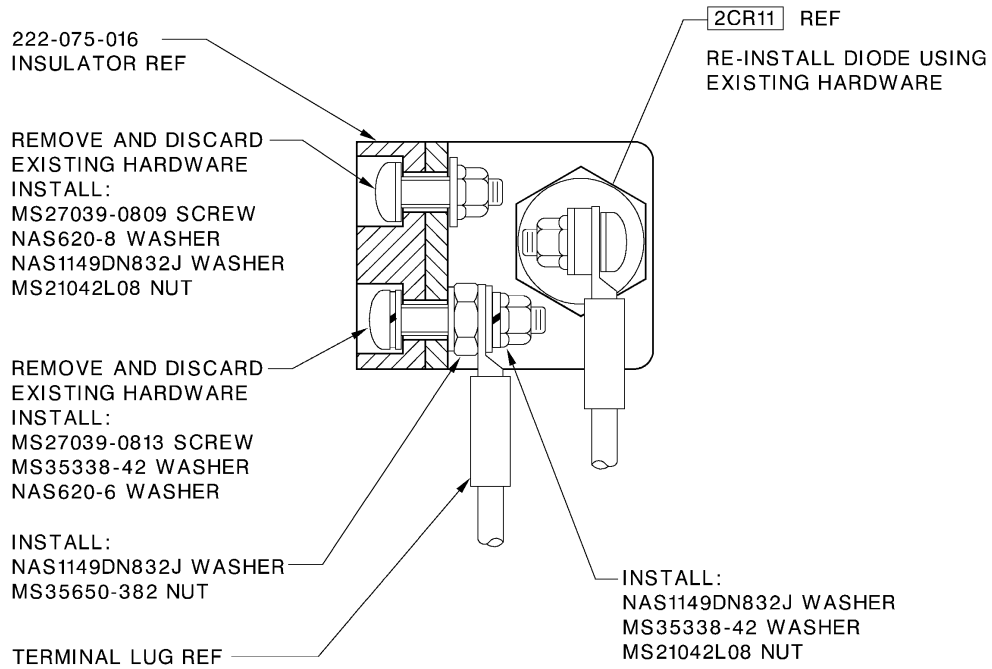
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FIGURE 1
Page 3

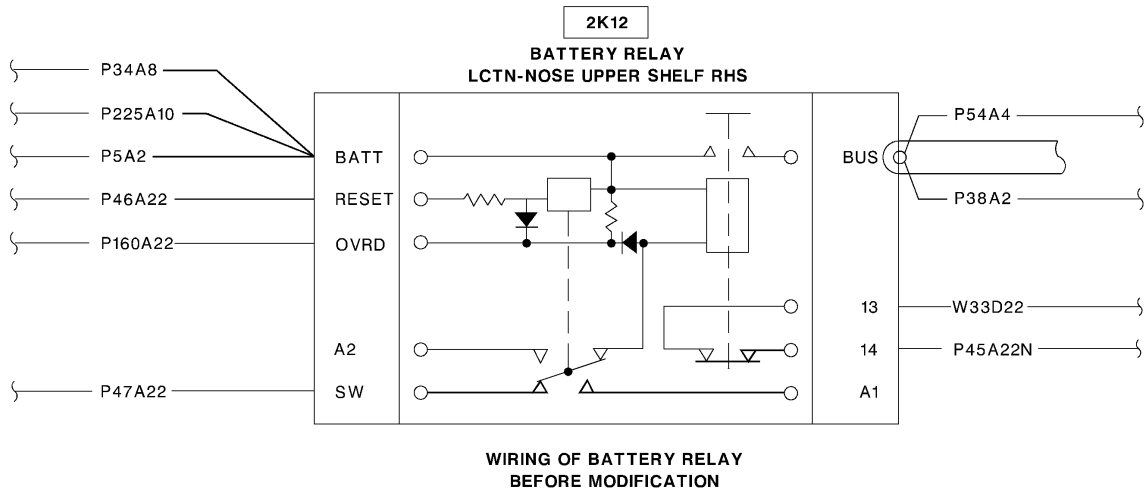
REMOVE AND DISCARD EXISTING
222-075-015-1 BRACKET
INSTALL:
430-704-001-115 BRACKET



VIEW C-C

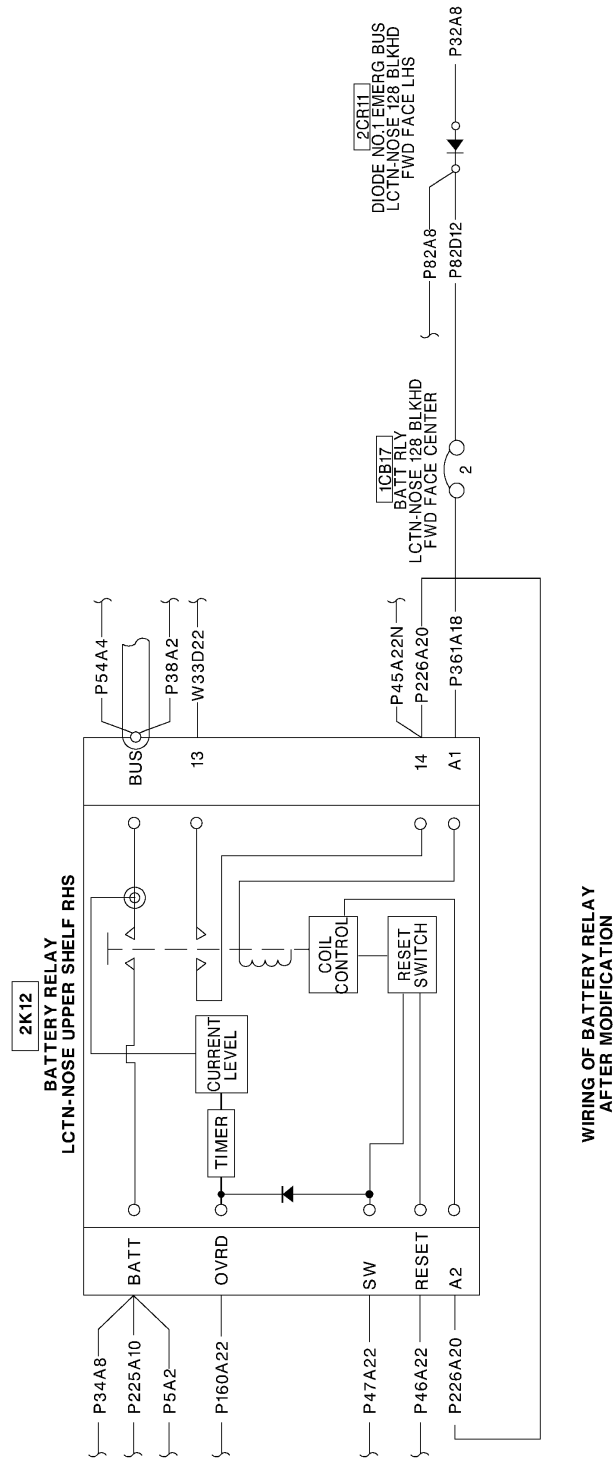
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FIGURE 1
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PTB00106

FIGURE 2
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PTB00105

FIGURE 2
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