



CHAMPION AEROSPACE, INC.

# SERVICE LETTER

ATA SYSTEM: 24-30

NUMBER: SL28VS200Y4DH-24-04-001

**SUBJECT:** Electrical Power - DC Generation - Transformer Rectifier Unit (TRU) Fan Motor Upgrade

## 1. PLANNING INFORMATION.

### A. Effectivity.

(1) TRU Affected: 28VS200Y-4DH

### B. Reason.

(1) Problem/Condition:

The transformer rectifier units (TRUs) existing fan motor assembly (P/N: 2561613) has been upgraded to a new fan motor assembly (P/N: 2031526) for improved reliability and increased life.

(2) Cause:

Original approved fan motor assembly (P/N: 2561613) presents long-term reliability concerns. New design sought by Dash-8 cost working group offers improved life cycle and greater reliability.

(3) Solution:

Utilization of the TRU fan assembly addresses need for longer life TRU cooling fan assembly. This service letter provides an inspection, and if necessary, a replacement of the TRU fan motor assembly. Operators who are certified to do the replacement of the TRU fans, will only replace the TRU fans. Operators who are not certified to do the TRU fan replacement will return the TRU assembly for fan motor replacement to appropriate Satair representative.

The modification conveyed by this Service Letter provides increased reliability for the DC generation system with use of new and improved fan motors.

### C. Description.

Electrical AC power is applied. Access panels to TRU's are opened. An operational test of the TRU's is done. Each TRU fan is examined for operation (inoperative fan motor is defined as one which is not turning at all, or is turning slow enough that each blade is visible with the human eye). Any inoperative TRU fan is replaced (If operator is not certified to replace TRU fan, the complete TRU assembly must be replaced), the TRU is reinstalled and an operational test is done. Access panels are closed.

### D. Approval.

This Service Letter contains no modification information that revises the approved configuration and therefore does not require governmental or other regulatory agency approval.



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E. Manpower.

Approximately 2.0 man-hours will be required to complete this Service Letter. This estimate assumes the TRU has already been removed from the aircraft and placed on a work bench. The man-hour estimate is direct labor done by an experienced operator and does not include planning, familiarization, part identification, time to acquire tools or lost time.

F. Weight and Balance.

(1) A small weight decrease of 0.3 lbs. (0.136 kg) per unit will be noted.

G. Electrical Load Data.

Not Affected.

H. Software Accomplishment Summary.

Not Affected.

I. References.

(1) De Havilland Dash 8, Component Maintenance Manual 24-31-46, dated 05-24-85.

J. Publications Affected.

(1) De Havilland Dash 8, Component Maintenance Manual 24-31-46, dated 05-24-85.

K. Interchangeability and Intermixability of Parts.

Not Applicable.

2. MATERIAL INFORMATION

A. Costs and Availability.

(1) There is a repair kit available for this service letter. Operators capable of replacing fan motors will need to contact Satair for the upgrade fan motor kits. Satair is the sole approved distributor for this fan motor kit. The worldwide contact information is in the Appendix section of this Service Letter. Operators who cannot replace fan motors will need to contact appropriate Satair representative for TRU repair options, replacement and turnaround times.

(2) The estimated total cost of fan motor kits needed to replace inoperative fan motors is: \$2,765.00 (US, 2004).



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B. Necessary Materials Needed for Each TRU.

The quantity of materials listed in this section is on a per TRU basis.

New Part Number	Keyword	Old Part Number	Qty.	Est. Unit List Price (\$US, 2004)
- - -	Fan Motor Assy.	2561613	1	
2031526	Fan Retrofit Kit		1	\$2,765.00

C. Tooling – Price and Availability.

None.

3. ACCOMPLISHMENT INSTRUCTIONS

A. General.

Disassemble the 28VS200Y-4DH TRU in accordance with the instructions provided in this Service Letter only to the extent necessary to perform the required repair. Numbers in parentheses refer to the Illustrated Parts List, Figure 1 of the De Havilland, Canada Dash-8, Component Maintenance Manual (24-31-46), unless otherwise indicated, and should be referenced for specific procedures and parts identification.

Illustrations and photos have been provided in this Service Letter for clarity and should be referenced while performing these accomplishment instructions.

**NOTE: THE WIRE COLOR SCHEME HAS CHANGED. PLEASE REFER TO THIS SERVICE LETTER FOR THE PROPER WIRING INSTRUCTIONS.**

B. Disassembly - Remove Original Fan Motor Assembly (P/N:2561613).

NOTE: During removal of original fan motor assembly, it is not necessary to remove the input connector (93) or the reactor (75).

- (1) Remove mounting base (3), end bell (1) case assembly (6) and Nomex paper (if supplied) in accordance with IPL, Figure 1 of Component Maintenance Manual 24-31-46.
- (2) Remove original fan motor assembly (100) wire lugs (112) from AC Terminal Board (81).
- (3) Remove three nuts (102), three lockwashers (103), three flat washers (108) and three spacers (104) from original fan motor assembly (100) as illustrated in Figure 1.
- (4) Remove original fan motor assembly (100) from tie bolts (101).
- (5) Remove remaining three spacers (104) and nuts (102) from tie bolts (101).

NOTE: Retain all hardware removed during disassembly for subsequent use during assembly of new fan motor assembly.



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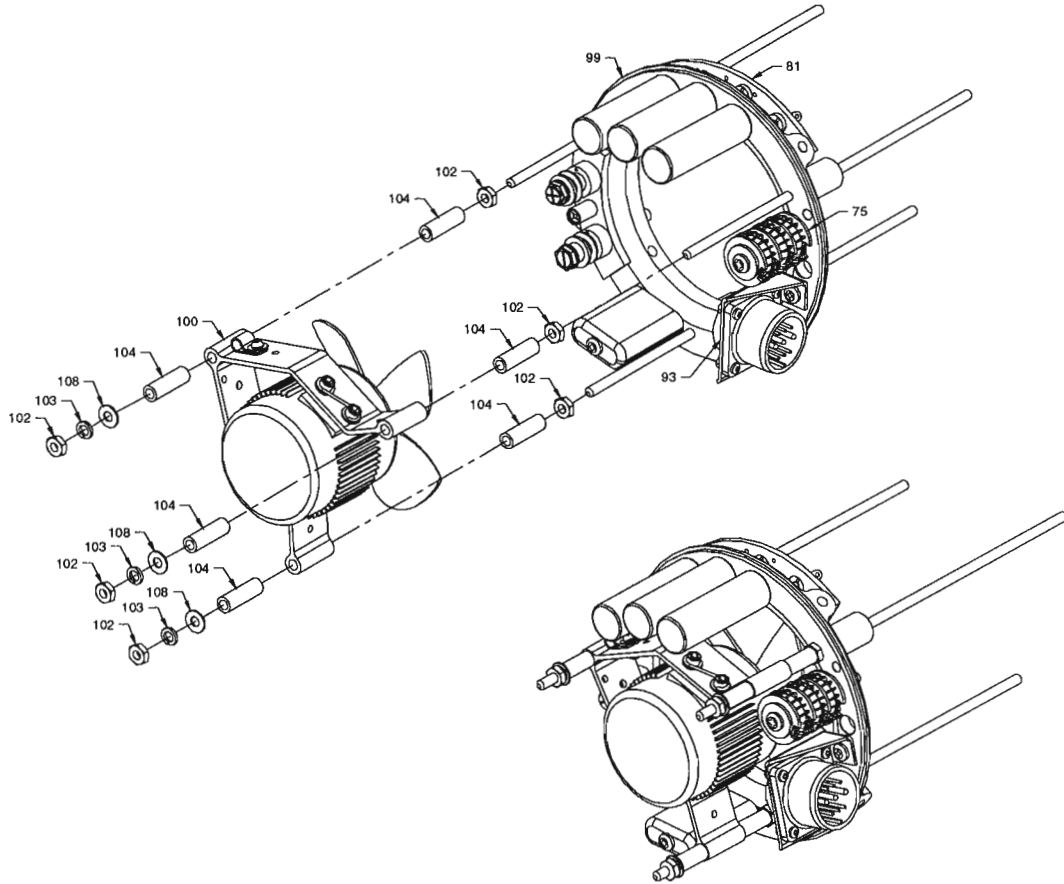


Figure 1. Original Fan Motor Assembly Removal

C. Assembly - Install New Fan Motor Assembly (P/N: 2031526).

**NOTE:** Use retained hardware from disassembly of original fan motor assembly (P/N:2561613) for assembly of new fan motor assembly (P/N:2031526).

**NOTE:** Unless otherwise indicated, use the following torque values:

- 6-32 Nuts (7-8 in-lbs)
- 10-32 Nuts (24-26 in-lbs)
- 1/4-28 Bolts (72-80 in-lbs)

**NOTE:** Prior to assembly of new fan motor assembly, it is necessary to move the input connector (93) and reactor (75) aside. Desoldering the electrical connections is not required. Refer to Figure 2.

- (1) Remove two screws (97) and two nuts (98) securing input connector (93) to motor ring (99) and set input connector (93) aside.
- (2) Remove screw (76), washer (78) and nut (77) securing reactor (75) to motor ring (99) and set reactor (75) aside.



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- (3) Install new fan motor assembly (100) (P/N: 2031526) onto tie bolts (101).
- (4) Assemble three plain nuts (102) onto tie bolts (101) immediately following the new fan motor assembly (100). Torque to 24-26 in-lbs.
- (5) Install six spacers (104), three flat washers (108), three lockwashers (103) and three plain nuts (102) onto tie bolts (101). Torque to 24-26 in-lbs.
- (6) Position reactor (75) onto motor ring (99) and install screw (76), washer (78) and nut (77).
- (7) Position input connector (93) onto motor ring (99) and install two screws (97) and two nuts (98).
- (8) Install fan wire lugs (112) from new fan motor assembly (100) (P/N: 2031526), to AC terminal board (81). See Figure 3 for view of proper wire routing and termination.
- (9) Ensure fan motor air flow direction is correct.
- (10) Install mounting base (3), end bell (1) (torque prevailing torque nuts 10-32 to 10-12 in-lbs.) case assembly (6) and Nomex paper (if supplied) in accordance with IPL, Figure 1 of component maintenance manual 24-31-46.
- (11) Stamp nameplate (9), directly under part number, with the letter "U" to reflect fan motor has been upgraded.

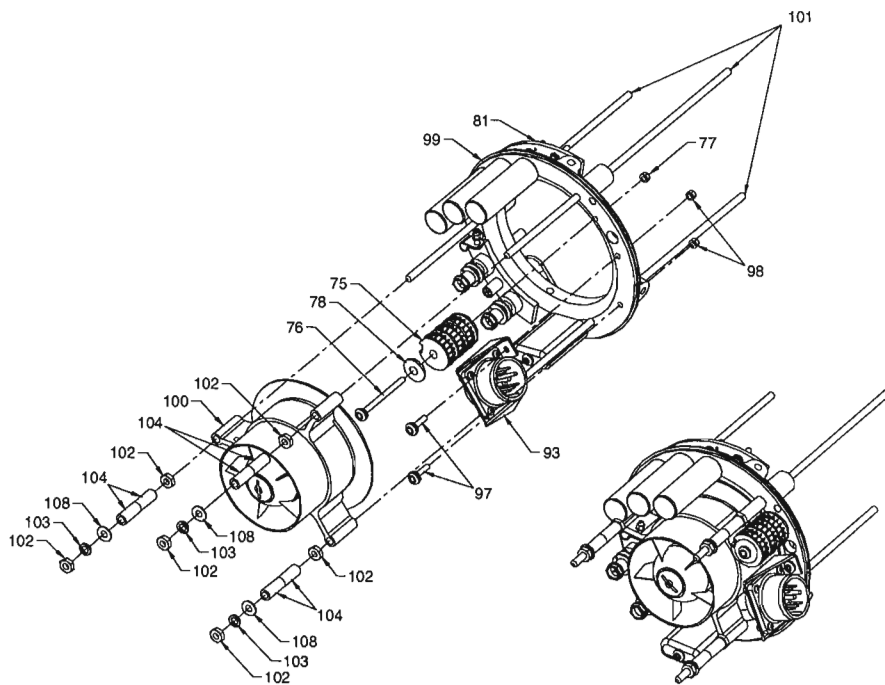


Figure 2. New Fan Motor Assembly Installation.



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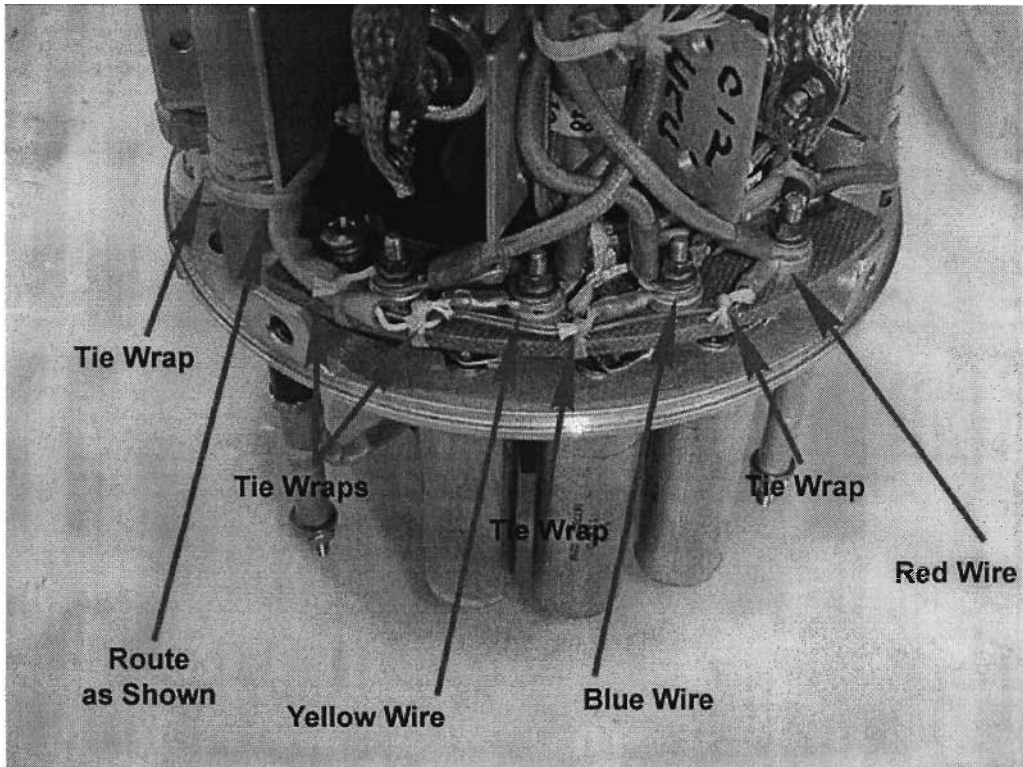
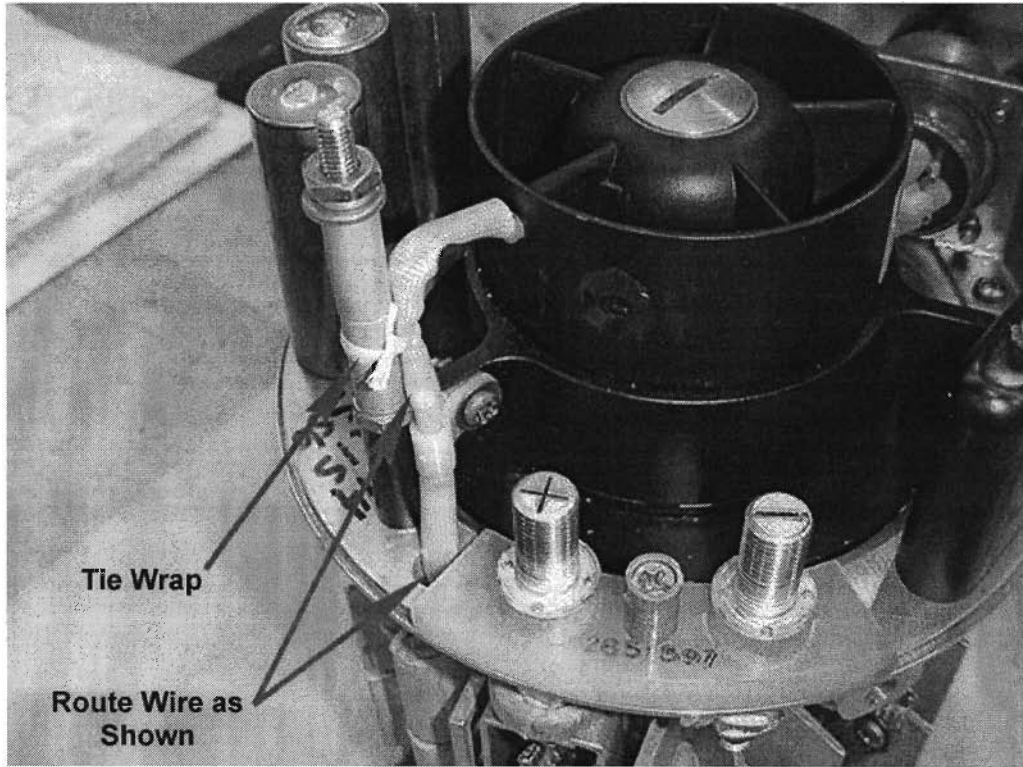


Figure 3. New Fan Wire Routing and Locations.



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4. APPENDIX.

## CONTACT INFORMATION

### North and South America

Satair USA, Inc.  
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