

SERVICE BULLETIN

CBC-SB-05202015-1

May 20/2015

SUBJECT: AVOIDING PARASITIC DRAIN BY DISCONNECTING BATTERY WHEN AIRCRAFT IS INACTIVE

APPLICABILITY: BOMBARDIER SERIES CL-600 AIRCRAFT INCORPORATING STC ST01646WI

Summary

This Service Bulletin provides instructions for disconnecting the Main and APU batteries when the aircraft is expected to be inactive for more than 48 hours. This procedure will prolong the life of the battery by stopping parasitic loads that are present when aircraft power is turned off.

Background

The adverse effect of parasitic drain on battery life is covered by Concorde Battery Technical Bulletin No. 10. Using Concorde's Parasitic Load Test Adapter P/N 4102, parasitic loads have been measured on several CL-600-2B16 (CL-605) aircraft. The parasitic load ranged from 21 to 23 mA on the Main battery and from 72 to 88 mA on the APU battery. A 23 mA load on the Main battery will discharge 10% of its capacity in 74 hours and an 88 mA load on the APU battery will discharge 10% of its capacity in 48 hours. To maximize battery life, the depth of discharge (DOD) due to parasitic drain should be limited to 10%. Therefore, it is recommended that both batteries be disconnected from the aircraft when it is expected to be inactive for more than 48 hours. It is assumed that other CL-600 models included in STC ST01646WI (CL-600-2B19, CL-600-2C10, and CL-600-2D24) have similar parasitic loads, so the same recommendation would apply. However, if the parasitic loads are found to be significantly different in these models compared to the CL-600-2B16 model, then the time interval for disconnecting the batteries should be adjusted as covered below.

NOTE: Disconnecting the batteries when they reach 10% DOD is recommended but is not required for continued airworthiness. Bombardier servicing instructions for the CL-600 Series aircraft indicate that the batteries are to be disconnected when the aircraft is stored for more than 7 days. Following this instruction will prevent the batteries from being over-discharged due to the parasitic load, but it will allow the DOD to exceed 10% which may negatively impact battery life.

CAUTION: Make sure the mating plug stays horizontally aligned with the battery receptacle during each mating cycle. Misalignment of the plug can result in excessive shear forces that gradually wear down the retaining pins inside the engagement socket. Refer to Technical Bulletin No. 11 for further information.

The data/information contained herein has been reviewed and approved for general release on the basis that this document contains no export-controlled information.

Instructions

A. Model CL-600-2B16

1. After aircraft is powered down, obtain an estimate of when the aircraft will next need to be powered up for servicing or operation.
2. If the estimated time in Step (1) is longer than 48 hours, disconnect the mating plug from the Main battery and APU battery in accordance with the instructions given in the aircraft servicing manual.

NOTE: The 48 hour time interval may be adjusted to shorter or longer values if necessary to accommodate operational logistics. A minimum interval of 24 hours and maximum interval of 60 hours is recommended.

B. Models CL-600-2B19, CL-600-2C10, CL-600-2D24

Option A – Follow the same instructions covered above in Section A for Model CL-600-2B16

Option B – Measure parasitic loads and adjust the time interval if the loads are significantly different compared to Model CL-600-2B16:

1. Measure the parasitic loads as detailed in Concorde Battery Technical Bulletin No. 10 (available for download at www.concordebattery.com).

NOTE: The use of Concorde's Parasitic Load Test Adapter P/N 4102 is recommended for the parasitic load measurement. Contact one of Concorde Battery's Aircraft Battery Distributors for ordering information.

2. If the measured parasitic loads are within +/- 20% of the loads cited above under Background, then use Option A.
3. If the measured parasitic loads are not within +/- 20% of the loads cited above under Background, then adjust the time interval as follows:
 - a. Calculate the time to reach 10% DOD for the Main battery:
Time (Hours) = $1700 \div \text{Parasitic Load (mA)}$.
 - b. Calculate the time to reach 10% DOD for the APU battery:
Time (Hours) = $4200 \div \text{Parasitic Load (mA)}$.
 - c. Use the lower value from Step (a) and Step (b) as the disconnect time interval in place of 48 Hours specified above for Model CL-600-2B16.



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RECORD OF REVISIONS

Revision	Date	Description	Approved
NC	May 20/2015	Initial release.	PH