

Grant Robinson

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Sent: Friday, June 15, 2018 10:46 AM
To: Thanakom Panyothin
Cc: Grant Robinson; Nattawut Wongyai; Daryl Dixon; Nakhon Avionics
Subject: S-76D battery overheat - Vendor response

Importance: High

Khun San

Following is the response from Concorde Battery regarding their joint investigation along with Sikorsky engineering into the several instances of battery overheat experienced in the TAS S-76D fleet.

Please note in particular Concorde's recommendation to periodically verify that external power supply output voltages are appropriate to the OAT, and to use the BatteryMINDER for overnight charging.

Based on the data provided and the condition of the batteries, the problem is coming down to overcharging. The voltage settings and charge time on the GPU's are the most likely culprits. We would recommend in order to extend battery life the customer should institute procedures to verify the GPU voltage settings on a regular basis and to charge the battery using BatteryMINDER to ensure the batteries are fully charged overnight and ready for the next day.

<http://www.concordebattery.com/accessories.php?id=58>

All battery chemistries do not like high temperatures and operating in continual high temp environments will shorten a battery's life and also make it more susceptible to being overcharged. To increase battery life in high temperature operating environments, the charge voltage needs to be reduced and limit excess charging if/when it is not necessary. This is a good situation where a BatteryMINDER can help since it is temperature compensated. It will drop to a float voltage once the battery is fully charged instead of maintaining a high charge voltage.

Below are the recommended charging voltages for RG Series batteries.

Battery Temperature	Voltage Regulator Setting (Volts DC)
Below 0°C (32°F)	29.0 – 29.5
0 to 15°C (32 to 59°F)	28.5 – 29.0
16 to 30°C (60 to 86°F)	28.0 – 28.5
31 to 45°C (87 to 113°F)	27.5 – 28.0
Above 45°C (113°F)	27.0 – 27.5

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