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FREEFLYSYSTEMS.COM

DATE: 10-FEB-2016

SUBJECT: SERVICE BULLETIN - ALTA FIRMWARE UPDATE TO MITIGATE HIGH TEMPERATURE FAULT

DISCUSSION

Recently, three (3) Freefly ALTA customers have lost control of their ALTAs and crashed when flying with payload above the stated maximum shown in the ALTA Aircraft Flight Manual (AFM). When operated at higher payloads, the ALTA motors must spin faster than normal in order to generate lift necessary to remain airborne. This causes the ESCs to overheat, which can create an ESC microcontroller fault, loss of command signal, and inability to control the aircraft.

The Status Light located at the rear panel of the ALTA indicates the status of ALTA during boot, arming, and flying. During flight, critical alarms are conveyed to the pilot using the Status Light. For Synapse firmware versions 3.4 and prior, the Status Light illuminates red when the ESC temperature reaches 90°C, indicating that the pilot should land immediately.

After extensive testing, some aircraft exhibit this failure below 90°C. Therefore, Freefly has decreased the temperature alarm from 90°C to 70°C in Synapse firmware v3.5.1, available in the App Store and Google Play.

This high temperature fault is most likely to be provoked when flying at a gross weight above the limitations stated in the ALTA AFM, though it may be possible to reach this limit even if gross weight does not exceed specifications. A review of available flight data from over 4400 ALTA flights across a range of operating conditions shows that most flights will remain below 70°C. Operating payload, flight style (aggressive vs. docile), and ambient temperature can affect individual results.

Freefly recommends that all pilots read and understand the ALTA AFM prior to operating the aircraft to ensure compliance with specifications and limitations. During flight, the pilot should always observe the Status Light and respond accordingly in the event of alarm.

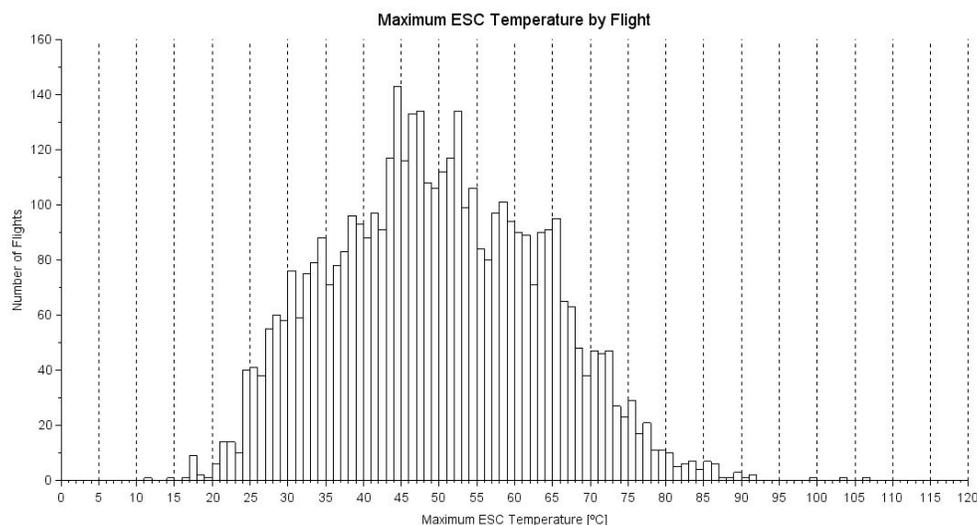


Figure 1. Review of available flight data from 4400 ALTA flights.



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RECOMMENDATIONS

Freefly recommends installing the latest release of Synapse firmware v3.5.1 using the ALTA App at your earliest convenience. As always, observe the Status Light during operation, and land the aircraft in case of alarms.

Note: users may elect to continue operating the ALTA prior to installing firmware v3.5.1. In this case, Freefly recommends monitoring ESC temperatures during flight using the charting tools available in the ALTA App and landing if the temperatures reach 70°C.

Additional updates to ESC firmware to eliminate the high temperature fault will be made available in the forthcoming weeks. Freefly will issue a follow-on Service Bulletin when this update is available.

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