



Interagency Aviation Accident Prevention Bulletin



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Subject: Defective Matrice 600 Flight Batteries

Area of Concern: Uncrewed Aircraft Systems Operations (UAS)

Distribution: All UAS Operators

Discussion: The Matrice 600 is coming into its fifth year of service. Based on recent mishaps, it is quite probable the DOI and Forest Service M600 fleet may have unknown defective flight battery sets that need to be removed from service. Three related SAFECOMs have been published in the last month, two were mishaps resulting in complete loss of Matrice 600 and Zenmuse XT2. In the third incident, the failure was observed, and corrective action taken before a mishap occurred. As battery sets come to the end of life as described in [SAFECOM #22-0234](#), or are identified as defective ([SAFECOM #22-0240](#) and [SAFECOM #22-0232](#)), if they remain in service, they may have insufficient power to maintain flight which would result in an uncontrollable rapid descent into terrain.

Key Points to ensure a safe flight:

- Perform battery life check per Matrice 600 User Manual, page 11, “Checking the Battery Life.”
 - Discard batteries that are not charging or discharging at an acceptable rate.
- Perform battery percentage check
 - This step shall be added to the preflight check list and provided to carded pilots to ensure all batteries are charged +/- 2% of each other. All six batteries should be 100% charged before launch.
 - Pilots shall ensure continuous monitoring during flight to assure batteries are discharging at an acceptable +/- 10% threshold rate.
- Standard UAS operations now requires the battery icon be displayed for all Matrice 600. During flight, when one battery is holding more than 10% remaining above the others, the system is only utilizing 5 of the 6 and can't maintain flight. The UAS needs to return to home to be assessed. The flight log will record the diagnostics, if “Battery Voltage Difference too large. Check Battery Status” is logged the battery set will be removed from service.

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