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REVIEW OF SIGNIFICANT INCIDENTS AND CLOSE CALLS IN HUMAN SPACEFLIGHT FROM A  
HUMAN FACTORS PERSPECTIVE

**Abstract**

This project aims to identify poor human factors design decisions that led to error-prone systems or did not facilitate the flight crew making the right choices; and to verify that NASA is effectively preventing similar incidents from occurring again. This analysis was performed by reviewing significant incidents and close calls in Human Spaceflight identified by the NASA Johnson Space Center Safety and Mission Assurance Flight Safety Office. The review of incidents shows whether the identified human errors were due to the operational phase (flight crew and ground control) or if they initiated at the design and development phase (includes manufacturing and test). This in-depth analysis resulted in a tool denominated by Human Factors Classification of Significant Incidents and Close Calls in Human Spaceflight, which can be used as a stand-alone tool to identify human errors at the operational level and how they were or should be minimized. Current governing documents on human systems integration for both government and commercial crew were reviewed to see if current requirements, processes, training, and standard operating procedures protect the crews (and ground control) against these issues occurring in the future. Based on the findings, recommendations to target those areas are provided.