Subject <https://llis.nasa.gov/lesson/779>

***Environmental Test Sequencing***

Abstract

Preferred Practice for Design & Test. If the thermal-vacuum tests do not follow the dynamics tests, more intermittent or incipient discontinuity type failures may go undetected. If the defects are not detected during assembly level tests and are subsequently detected during the system level tests, redesign or rework at this late stage of the process could cause delays, increase costs, or make it necessary to accept additional risk that might have been avoided. If the defects are not detected at the system level, the defects may then cause hardware anomalies during the mission, and in the extreme could cause a mission failure. Perform dynamic tests prior to performing thermal-vacuum tests on flight hardware.

Subject <https://llis.nasa.gov/lesson/784>

***Powered-On Vibration***

Abstract

Preferred Practice for Design & Test. A failure to conduct powered-on vibration test may increase the risk of flight equipment containing flaws or intermittencies, such as electrical arcing, open circuits, and relay chatter, that may cause mission compromises or hardware failures. Supply power to electronic assemblies during vibration, acoustics, and pyroshock, and monitor the electrical functions continuously while the excitation is applied.

Subject <https://llis.nasa.gov/lesson/817>

***Vibroacoustic Qualification Testing of Payloads, Subsystems, and Components***

Driving Event

This Lesson Learned is based on Reliability Practice number PT-TE-1419 from NASA Technical Memorandum 4322A, NASA Reliability Preferred Practices for Design and Test.

Benefit:

Adherence to the practice alleviates vibroacoustic-induced failures of structural stress and fatigue, unacceptable workmanship, and performance degradation of sensitive subsystems including instruments and components. Implementation of this practice assures that minimal degradation of "design reliability" has occurred during prior fabrication, integration and test activities.

Subject <https://llis.nasa.gov/lesson/697>

***Active Redundancy***

**NASA's Preferred Practices** [***https://engineer.jpl.nasa.gov/preferred\_practices.html***](https://engineer.jpl.nasa.gov/preferred_practices.html)