

SHUTTLE CRITICAL ITEMS LIST - MSLS GROUND STATION

SUBSYSTEM: GROUND STATION - MSLS FMEA-NO.: 05-2SW-00025 Rev: 9 April 90  
 ASSEMBLY : B/U Field Monitor Pole ABORT: CRIT. FUNC: 1R  
 P/N : 517085 CRIT. HDW: 2  
 QUANTITY : 1 VEHICLE 102 103 104 105  
 EFFECTIVITY: X X X X  
 PHASE(S) PL LO CO DO X LS  
 REDUNDANCY SCREEN: A-pass B-fail C-pass

PREPARED BY: \_\_\_\_\_ APPROVED BY: \_\_\_\_\_ APPROVED BY (NASA): \_\_\_\_\_  
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ITEM: B/U Field Monitor Pole

FUNCTION: Monitors all B/U RF outputs for proper operation; generates alarm and causes shutdown of B/U Shelter if any RF output is lost or is erroneous.

FAILURE MODE: All B/U guidance RF outputs (to dummy loads) are operating properly, but B/U Field Monitor Pole fails. ("false alarm" mode).

CAUSE(S): A B/U Field Monitor Pole LRU fails due to piece part electrical failure. The LRU's which can cause this failure mode (05-2SW-00025) are listed below, with LRU Designator No., LRU P/N, and LRU Name:

LRU No.:	LRU P/N:	LRU Name:
412	502358	Antenna, Guidance Monitor
710	517080	Cables, Interconn, Ext (to Field Monitor Pole)
810	502154	Assy, Field Monitor Pole (Az)

EFFECT(S): (A) SUBSYSTEM (B) INTERFACES (C) MISSION (D) CREW/VEHICLE

- (A/B) This failure cannot be detected when it occurs, since the B/U Field Monitor Pole is normally "off" (unpowered). Therefore, good RF signals from the PRI Shelter continue to be radiated. However, if there is a PRI "SYS ALARM"; the B/U Shelter will be shut down immediately upon completion of autoswitch, and there will be no RF guidance outputs from the MSLS-SW.
- (C) Not applicable.
- (D) No effect on this failure. Possible loss of crew/vehicle after second failure (loss of PRI) due to loss of good RF guidance signals at the Orbiter.

SHUTTLE CRITICAL ITEMS LIST - MSBLS GROUND STATION

SUBSYSTEM: GROUND STATION - MSBLS      FMEA NO.: 05-2SW-00025      Rev: 9 April 90  
SUP: 17 Oct 88

(E) - OPERATIONAL USE

For lower ceilings (8,000 to 10,000 feet) or night operations, redundant MSBLS (single fault tolerance) is required for night landing on a concrete runway. MSBLS is also mandatory for daylight landings on the lakebed with reduced ceilings, but is not required to be redundant. Deorbit is not attempted if the ceiling is less than 8,000 feet to ensure good visibility at low altitude. If radar tracking data (available at Edwards, KSC, and Northrop only) and ground communications are available, the MCC can attempt to resolve a MSBLS dilemma. Remote control operators are trained to evaluate system health and recognize probable failure modes from the Remote Control Unit Display. The Remote Control Operators will verify the back-up switching transition has occurred properly or take action to force the system into back-up. The Remote Control Unit Display is monitored to determine a malfunction and advise the chain of command on the status.