



**aerospace
systems Division**

SYSTEM SAFETY
PROGRESS REPORT,
ALSEP Array E

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ATM 1034	
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This ATM documents the progress of the System Safety Program for ALSEP Array E.

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1. Identified Hazards

1.1 Description

LSG - ALSEP Subpackage No. 1 interface identified as a potential "Safety Catastrophic" hazard in ATM 1017. Tension on sunshade creates possibility of throwing boyd bolts with sufficient force to strike astronaut EMU or to transmit sufficient force through UHT to throw astronaut off balance.

1.2 Status

Tests are to be performed at A. D. Little Corp. on July 19 and 20 to evaluate the hazard. Various other methods of holding down the LSG Experiment are being investigated in the event that the existence of the hazard is confirmed.

2. Design Changes Affecting Safety

2.1 Description

ECN 2348593 X₃ - Incorporation of a Lead Assembly into the LSP electronic and safe arm assembly. The Lead Assembly contains between 150 and 200 mg of HNS and, therefore, will require manufacturing surveillance and definition of handling procedures.

2.2 Status

The lead has been investigated to determine explosive potential. The additional safety effort required has been defined to the LSP Experiment Manager. The safety requirements for LSP End Detonating Cartridges, Detonator Assemblies and Electronics and Safe Arm Assemblies must be updated to include Lead Assemblies by 5 August 1971.

3. Identified Safety Discrepancies

None



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4. Tests and Operational Procedures

- 4.1 Number Reviewed: 4
- 4.2 Number containing hazardous sequences: 3
- 4.3 Description of Hazardous Sequences identified since last report:
 - a. Soldering of pig-tailed wires to LSP Detonator Assembly and potting of assembly
 - b. Proof test of LSP Detonator Assembly
 - c. Measurement of LSP Detonator Assembly

5. System Safety Documents Submitted Since Previous Report

- 5.1 ATM 1016 - Gross Hazard Analysis Report, LEAM, released 6/11/71.
- 5.2 ATM 1017 - Gross Hazard Analysis Report, LSG, released 6/11/71.
- 5.3 ATM 1018 - Gross Hazard Analysis Report, LMS, released 6/12/71.

6. Residual Hazard List

None

7. Narrative

During the month of July, (1) the LSP Detonator Assembly Holding Fixture will be tested for manufacturing safety. System Safety will participate in the test which will consist of setting off a detonator assembly to test structural integrity. (2) The LSP End Detonating Cartridges, Detonator Assemblies, and Electronics and Safe Arm Assemblies will be updated to include Lead Assemblies by 5 August 1971. (3) A Detailed LSPE Hazard Analysis will be completed by 30 July 1971. (4) Release tests on LSP Boyd Bolts will be performed to confirm existence of hazard or to reduce the hazard to an acceptable level.