



Space  
Systems Division


NOVEMBER SYSTEM SAFETY  
PROGRESS REPORT  
ALSEP ARRAY E

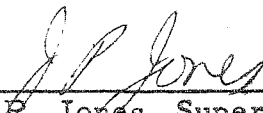
ATM 1078


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DATE 12/21/71

This ATM documents the progress of the System Safety Program for ALSEP Array E through November 1971.

  
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1.0 IDENTIFIED HAZARDS

1.1 LSG/Subpack No. 1 Interface

1.1.1 Description

The method of LSG attachment to Subpack No. 1 is through the use of four (4) boyd bolts. These boyd bolts deflect the sunshield to create the possibility of "throwing" boyd bolts with sufficient force to strike an astronaut EMU or to transmit sufficient force through the UHT to throw an astronaut off balance.

1.1.2 Status

The hazards involved in normal deployment of the LSG Experiment have been reduced to negligible. A residual hazard has been defined to the MSC Safety Office. The effect of a boyd bolt shearing at a time when an astronaut is over the LSG cannot be determined until the capability of the EMU to restrain a low energy impact has been investigated by MSC.

2.0 DESIGN CHANGES

Array E design changes are reviewed from the safety viewpoint prior to initiating the change. During this report period there were no design changes which had safety impact.

3.0 IDENTIFIED SAFETY DISCREPANCIES

No safety discrepancies have been identified during this report period.

4.0 TESTS AND OPERATIONAL PROCEDURES

A total of 35 procedures have been reviewed and six of these procedures contained hazardous sequences. Two new procedures with hazardous sequences have been identified since the last report. Note: These two procedures are also subject to review by the MSC Safety Office.



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4.1 Description of Hazardous Procedures Identified since Last Report Period

4.1.1 Standard Charge Detonation Procedure - TP 2365589

This is a field test procedure for the detonation of standard charges in order to verify test setup. It is inherently hazardous because of the requirements to handle one (1) pound standard charges.

4.1.2 LSP Field Test Countdown Procedure - TP 2365378

This procedure details the deployment and detonation of the LSP Explosive packages and, therefore, contains numerous hazardous sequences.

5.0 SYSTEM SAFETY DOCUMENTS

No new System Safety Documents have been submitted since last report period.

6.0 RESIDUAL HAZARD LIST

6.1 LSG/Subpack No. 1 Interface

A residual hazard has been identified on the LSG Experiment. Specifically, in the unlikely event of shearing an LSG Boyd Bolt at a time when the astronaut EMU could be hit by the bolt the effect on the astronaut EMU cannot be determined. The hazard exists as a residual hazard pending an MSC investigation of the capability of the suit to withstand impact from the bolt.

7.0 NARRATIVE

7.1 LSP Field Test Plan, LS-11

This document is being revised to reflect current hardware configuration and changes in field test procedures. Revision A will be released in early December.



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7.2 LSP Ground Operations and Safety Plan, ATM 1056 is being revised to reflect changes in hardware and operations since the original release. ATM 1056 Rev. A will be released in early December.

7.3 LSP Operational Hazard Analysis, ATM 1053, is being revised to make minor corrections and add clarification and will be released in early December.

7.4 Meetings Attended

System Safety provided support for the ALSEP Management Review Meeting during the week of 15 November 1971.