NA

MIT/IL SOFTWARE ANOMALY REPORT

MIT REPORT NO. LNY 69
PROGRAM LUMINARY
PROGRAM REVISION 97

1.1 ORIGINATOR:	1.2 ORGANIZATION:	1.3 DATE:	1.4 ORIGINATOR CONTROL NO.
R. D. GOSS	MIT/IL	5/14/69	

1.5 DESCRIPTION OF ANOMALY:

A spurious commanded firing of a downward forcing RCS jet in powered ascent.

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1.6 DESCRIPTION OF RUN:

An off-nominal run, LAUNCH82, was made for powered ascent from surface of moon to ascent engine cutoff. An off-nominal c.g. displacement was simulated in which c.g. displacement from the ascent engine thrust axis increased from a small value to approximately 2.5" along the +Z-axis at cutoff.

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- MIT ANALYSIS -

2.1 CAUSE:

Coding error in "ERRTEST" section of program. If the following conditions occur simultaneously about a control axis, then the LM DAP can enter the...

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2.2 RECOGNITION:

1 or 2 Isolated firings (of 100 ms duration) of a downward forcing jet during period of normal single jet control for ascent vehicle.

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2.3 MISSION EFFECT:

For nominal mission anomaly will not occur. For off-nominal case 1 or 2 extra firings of a downward forcing jet may occur during 430-second powered ascent. For 2 extra 100 ms firings of a downward forcing jet, an...

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2.4 AVOIDANCE PROCEDURE:

None needed.

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2.5 RECOVERY PROCEDURE:

None.

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2.6 PROGRAM CORRECTION:

Change ERRTEST section of section. An increase of 2 words of coding is required.

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2.7 RECOMMENDED DISPOSITION (Fix, Work-around, etc):

Fix in next release.

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2.8 RECOMMENDED RE-TESTING:

Rerun test run.

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2.9 MIT/IL SIGNATURE: [signature] 2.10 DATE: 5/15/69

3.1 NASA DIRECTION:

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4.1 CLOSING ACTION TAKEN:

Fix in LUMINARY 1B
[signature]

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3.2 NASA/MSC SIGNATURE:	3.3 ORGANIZATION	3.4 DATE:	4.2 SIGNATURE:	4.3 ORGANIZATION:	4.4 DATE:

MSC Form 1409 (Rev May 68)

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2.1 Cause, cont'd.

..."MAXJETS" section of coding and command an unwanted 2 jet firing about the axis.

(1) E = ± 0

(2) FIREDB < 0

Condition 2/ can occur only if ABSAOS > 11.25°/sec^2 and EDOT and AOSU have the same sign.

2.3 Mission Effect, cont'd.

...additional ΔV penalty of .09 ft/sec may be incurred, or equivalently a fuel penalty of approximately .05 lbs of fuel may be incurred.