

MIT/IL PROGRAM CHANGE ROUTING SLIP

PCR/PCN # \_\_\_\_\_  
ANOMALY # 2-1C-01

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|--------------------------------------|---|
| <input type="checkbox"/> COLOSSUS 2C | <input type="checkbox"/> LUMINARY 1B            |
| <input type="checkbox"/> COLOSSUS 2D | <input checked="" type="checkbox"/> LUMINARY 1C |
| <input type="checkbox"/> COLOSSUS 2E | <input type="checkbox"/> LUMINARY 1D            |
| <input type="checkbox"/> COLOSSUS 2F | <input type="checkbox"/> LUMINARY 1E            |

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> MIT Approved PCN | <input type="checkbox"/> NASA Approved PCR | <input type="checkbox"/> NASA Approved Software Anomaly           |
|   | <input type="checkbox"/> NASA Approved PCN | <input checked="" type="checkbox"/> MIT Approved Software Anomaly |

A. Coding

Begin coding immediately

P. Rye  
F. Kerven

ACTION: B. McCoy

Program Supervisor's Approval: Margaret H. Hamilton

Do not code until new GSOP material has been approved by the MIT Mission Design Review Board (MDRB) and distributed.

B. GSOP Preparation

Prepare GSOP revisions for MDRB consideration

ACTION: \_\_\_\_\_

Technical Committee Meeting not required.

Technical Committee Meeting(s) held on \_\_\_\_\_  
Attendees: \_\_\_\_\_

C. KSC Testing and Checkout

Review for possible impact on KSC testing and checkout

ACTION: \_\_\_\_\_

D. Other Programs Affected

Review for corresponding changes in \_\_\_\_\_

ACTION: \_\_\_\_\_

Special Instructions

Consult with Peter Adler

Project Manager P. Larson

Date 11-7-69

# MIT/IL SOFTWARE ANOMALY REPORT

MSC REPORT NO. <b>L-1C-01</b>
PROGRAM <b>LUMINARY</b>
PROGRAM REVISION <b>ALL</b>

1.1 ORIGINATOR: <b>P. ADLER</b>	1.2 ORGANIZATION: <b>MIT/IL</b>	1.3 DATE: <b>11/5/69</b>	1.4 ORIGINATOR CONTROL NO.
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1.5 DESCRIPTION OF ANOMALY:

Delta-V increment may be subtracted from  $V_G$  twice following a restart.

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1.6 DESCRIPTION OF RUN:

DOI Simulation at GAEC.

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- MIT ANALYSIS -

2.1 CAUSE:

Due to faulty restart protection, the code that subtracts DELVREF from  $V_G$  may be executed twice.

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2.2 RECOGNITION: Following a restart,  $V_G$  (R2 of N40) may drop by twice the amount of  $\Delta V$  accumulated in the past 2 seconds. This is not accompanied by a similar gain in DV total (R3, N40). At end of burn, DV total not equal to targeted  $V_G$  (71.1  $\neq$  63.5).

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2.3 MISSION EFFECT:

Causes LGC to command underburn. State vector unaffected; DOI results in 15 nmi perilune instead of 9 nmi.

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2.4 AVOIDANCE PROCEDURE:

None

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2.5 RECOVERY PROCEDURE:

Add appropriate  $\Delta V$  manually at end of burn, normally 8.7 fps at 40% throttle.

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2.6 PROGRAM CORRECTION:

Insert phase change in S40.8.

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

Fix for 1D. Program note for 1B, 1C.

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2.8 RECOMMENDED RE-TESTING:

Digital DOI with restarts.

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2.9 MIT/IL SIGNATURE: <i>Russell H. Larson</i>	2.10 DATE: <b>11-7</b>
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3.1 NASA DIRECTION:

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4.1 CLOSING ACTION TAKEN:

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