

MIT/IL SOFTWARE ANOMALY REPORT

MIT REPORT NO. LNY 86
PROGRAM LUMINARY
PROGRAM REVISION 97

1.1 ORIGINATOR: R. SIMPSON	1.2 ORGANIZATION: FMES/FCI	1.3 DATE: 6/4/69	1.4 ORIGINATOR CONSOLE NO. LM LUM 47
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1.5 DESCRIPTION OF ANOMALY:

GE4.4 No. 1 was an early abort from P63 into P70. At the end of P70 the FV37 was responded to with 00. About 18 seconds later a hardware restart occurred. The lights on the PAC indicated only a NIGHTWATCHMAN alarm. RSBBQ, +1 was 46063 (FBANK 23) and 07134 (DMPSUB1 area of the interpreter). A V74 was executed and the GOLOC area showed 03676 and 44067. This is a restart point in servicer near AVEGEND.

CONTINUED ON PAGE 2

1.6 DESCRIPTION OF RUN:

CONTINUED ON PAGE

- MIT ANALYSIS -

2.1 CAUSE:

CONTINUED ON PAGE

2.2 RECOGNITION:

CONTINUED ON PAGE

2.3 MISSION EFFECT:

CONTINUED ON PAGE

2.4 AVOIDANCE PROCEDURE:

CONTINUED ON PAGE

2.5 RECOVERY PROCEDURE:

CONTINUED ON PAGE

2.6 PROGRAM CORRECTION:

CONTINUED ON PAGE

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

MIT analysis of timing during the period in question shows that there should be no possibility of software causing a NIGHTWATCHMAN alarm.

CONTINUED ON PAGE 2

2.8 RECOMMENDED RE-TESTING:

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2.9 MIT/IL SIGNATURE: <i>Henry W. Cherry</i>	2.10 DATE: 7-16-69
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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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1.5 Description of Anomaly:

which essentially restarts AVETOMID. Apparently the program restarted successfully and the run continued to past CDH.

2.7 Recommended Disposition:

Conclusion is that the restart was generated by a hardware failure and not by a software problem. See data below compiled in an MIT re-run of the sequence described.

The following shows the number of times NEWJOB was accessed after selection of POO in response to V37FL for each 0.1 sec. during a repeat of the described run:

25	21	20	16	31
26	26	22	30	16
29	33	27	28	21
31	28	36	30	31
33	26	20	27	26
21	21	25	16	31
15	32	27	28	23
30	31	33	26	20
27	29	29	29	27
30	15	24	30	31
27	22	15	32	29
18	31	27	21	26
25	26	30	17	21
31	32	30	29	33
27	20	30	28	27
26	21	15	29	33
19	31	25	28	12
36	22	29	16	25
30	33	32	26	31
33	30	26	27	25
14	29	23	31	33
21	14	29	26	19
30	25	31	19	22
27	31	31	35	20
31	26	21	32	26
23	31			

Alarm conditions: $.64 \leq \Delta T \leq 1.92$

Total number of times NEWJOB accessed in 12.7 sec AVETOMID period = 3,333.

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PROGRAM REVISION	99

Conclusion: Alarm should not occur unless NEWJOB has not been accessed for at least .64 seconds. Since in this case NEWJOB was accessed no less than 12 times in any of the 0.1 second intervals, there can be no logical way of this alarm occurring during AVETOMID.