

MIT/IL SOFTWARE ANOMALY REPORT

MIT REPORT NO.	LNY 81
PROGRAM	LUMINARY
PROGRAM REVISION	99

1.1 ORIGINATOR: <p style="text-align: center;">GARMAN</p>	1.2 ORGANIZATION: <p style="text-align: center;">FSB - NASA</p>	1.3 DATE: <p style="text-align: center;">6/23</p>	1.4 ORIGINATOR CONTROL NO.
1.5 DESCRIPTION OF ANOMALY: <p>V41N72 is used to drive the RR to a given set of angles. The Noun loaded is N73 (TANG₀, TANG₁). These cells are shared by various RR routines which, if running while the crew is loading N73, will overwrite his load and cause (usually) a 502 alarm. The crew has no way of knowing N73 is overwritten (it is not displayed to him after loading) and hence driving to the <u>wrong</u> angles is feasible if the 502 alarm doesn't occur.</p> <p style="text-align: right;">CONTINUED ON PAGE</p>			
1.6 DESCRIPTION OF RUN: <p>Seen during an LMS Ascent simulation. What RR routine was running is unknown, but it was probably "DORREPOS" as I believe RADMODES bit 11 was set at the time. There are probably various ways to have that routine running while N73 is being loaded, however the...</p> <p style="text-align: right;">CONTINUED ON PAGE 2</p>			
- MIT ANALYSIS -			
2.1 CAUSE: <p>Sharing of erasables between the radar reposition task (DORREPOS and Noun 73 (TANG and TANG + 1). Also between REMODE task and Noun 73 and between the radar designate routines (RRDESSM ...</p> <p style="text-align: right;">CONTINUED ON PAGE 2</p>			
2.2 RECOGNITION: <p>502 alarm after loading Noun 73 inputs to V41 N72. Possible 503 alarm (RR designate fail) during R21 designate in P20...</p> <p style="text-align: right;">CONTINUED ON PAGE 2</p>			
2.3 MISSION EFFECT: <p>None.</p> <p style="text-align: right;">CONTINUED ON PAGE</p>			
2.4 AVOIDANCE PROCEDURE: <p>Do not load Noun 73 inputs while radar is being repositioned. This can be determined by monitoring shaft and trunnion angles</p> <p style="text-align: right;">CONTINUED ON PAGE</p>			
2.5 RECOVERY PROCEDURE: <p>Wait and reload Noun 73 inputs when reposition is over (about 10 seconds after 502 alarm). Recycle on 503 alarm if a ...</p> <p style="text-align: right;">CONTINUED ON PAGE 2</p>			
2.6 PROGRAM CORRECTION: <p>Eliminate erasables shared between radar tasks and jobs.</p> <p style="text-align: right;">CONTINUED ON PAGE</p>			
2.7 RECOMMENDED DISPOSITION (Fix, Work-around, etc): <p>Work around in LUMINARY 1A. Fix in LUMINARY 1B.</p> <p style="text-align: right;">CONTINUED ON PAGE</p>			
2.8 RECOMMENDED RE-TESTING: <p>Perform V41 N72, loading Noun 73 while radar is repositioning - also level 3 and 4 P20/P22 tests.</p> <p style="text-align: right;">CONTINUED ON PAGE</p>			
2.9 MIT/IL SIGNATURE: <i>Herbert W. Cherry</i>		2.10 DATE: 7-15-69	
3.1 NASA DIRECTION:		4.1 CLOSING ACTION TAKEN: 1	
CONTINUED ON PAGE		CONTINUED ON PAGE	
3.2 NASA/MSC SIGNATURE:	3.3 ORGANIZATION	3.4 DATE:	4.2 SIGNATURE:

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1.6 Description of Run:

normal designated routines also share TANG₀, TANG₁.

2.1 Cause:

and DODES) and REMODE and DORREPOS.

2.2 Recognition:

or P22 if a RR reposition occurs while R21 is recomputing the line-of-sight (done every 2 seconds during R21).

2.5 Recovery Procedure:

reposition has occurred while designating. A reposition is very unlikely in P20 since the spacecraft attitude is normally controlled to prevent designating near the RR mode limits (z-axis along LOS). In P22 a reposition is most likely to occur when attempting to track the CSM as it leaves radar coverage, in which case further radar designation is not possible until the next revolution.