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|--|--|----------------------------------|--|----------------------------------|--|--|--|
| 1.1 ORIGINATOR:<br>S. COPPS  |  | 1.2 ORGANIZATION:<br>MIT/IL      |  | 1.3 DATE:<br>11/3/69             |  | 1.4 ORIGINATOR CONTROL NO.<br>COM 31                                       |  |
| 1.5 DESCRIPTION OF ANOMALY:<br>The last sentence of paragraph 5.1.5.1.1 in Section 5 of GSOP states: "These two flags are mutually exclusive; that is, they cannot both be equal to one." This statement is invalid as a result of anomaly, COM 16 in that it is possible to have both ORSWFLAG and RENDWFLAG set equal to one, which could result in incorrect W-matrix extrapolation during P00. |  |                                  |  |                                  |  | PROGRAM<br>COLOSSUS<br>PROGRAM REVISION<br>67 & 72                         |  |
| 1.6 DESCRIPTION OF RUN:<br>Eyeball.  |  |                                  |  |                                  |  | CONTINUED ON PAGE  |  |
| - MIT ANALYSIS -   |  |                                  |  |                                  |  |  |  |
| 2.1 CAUSE:<br>See amplification sheet.   |  |                                  |  |                                  |  | CONTINUED ON PAGE  |  |
| 2.2 RECOGNITION:<br>Difficult  |  |                                  |  |                                  |  | CONTINUED ON PAGE 2  |  |
| 2.3 MISSION EFFECT:<br>See COM 16 and in addition could result in an invalid W-matrix, requiring a reinitialization.   |  |                                  |  |                                  |  | CONTINUED ON PAGE  |  |
| 2.4 AVOIDANCE PROCEDURE:<br>If either a V93E or a state vector update (via P27) has not occurred since the last mark incorporation in P20, then do V93E prior to...  |  |                                  |  |                                  |  | CONTINUED ON PAGE  |  |
| 2.5 RECOVERY PROCEDURE:<br>V93E.   |  |                                  |  |                                  |  | CONTINUED ON PAGE 2  |  |
| 2.6 PROGRAM CORRECTION:<br>On page 5.2-97 of Section 5, delete the block which sets RENDWFLAG = 0.<br>On page 5.2-98 of Section 5 in right-hand block, add setting of RENDWFLAG = 0.   |  |                                  |  |                                  |  | CONTINUED ON PAGE  |  |
| 2.7 RECOMMENDED DISPOSITION (Fix, Work-around, etc):<br>Fix for COLOSSUS 2E and work around for 2C and 2D.   |  |                                  |  |                                  |  | CONTINUED ON PAGE  |  |
| 2.8 RECOMMENDED RE-TESTING:<br>Level 4 testing.  |  |                                  |  |                                  |  | CONTINUED ON PAGE  |  |
| 3.1 NASA DIRECTION:<br>FIX FOR COLOSSUS 2E<br>(APOLLO 14)  |  |                                  |  |                                  |  | 2.9 MIT/IL SIGNATURE:<br><i>Stephen L. Coffey</i><br>2.10 DATE:<br>11/4/69 |  |
| 4.1 CLOSING ACTION TAKEN:<br>PROGRAM NOTE TRANSMITTED TO CREW OF APOLLO 12 BY PHONE<br>WRITE PROGRAM NOTE FOR COLOSSUS 2D<br><b>CLOSED</b>   |  |                                  |  |                                  |  | CONTINUED ON PAGE  |  |
| 3.2 NASA/MSC SIGNATURE:<br><i>John S. ...</i>  |  | 3.3 ORGANIZATION:<br>NASA/MSC/FS |  | 3.4 DATE:<br>11-13-69            |  | 4.2 SIGNATURE:<br><i>John S. ...</i>                                       |  |
|  |  | 3.5 ORGANIZATION:<br>NASA/MSC/FS |  | 4.3 ORGANIZATION:<br>NASA/MSC/FS |  | 4.4 DATE:<br>11/13/69  |  |

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2.1 Cause:

In order for this to happen, the ORBWFLAG must be set equal to 0 and the RENDWFLAG must be set equal to 1 when P23 is selected. P23 must then be terminated prior to a navigation mark acceptance and P00 must be selected and state vector integration allowed to occur.

The RENDWFLAG will normally be equal to 0 when P23 is called because a state vector uplink (either vector) will set the RENDWFLAG = 0 and it is very likely that a state vector uplink will have occurred since P20 was terminated.

2.4 Avoidance Procedure, cont'd.

...selecting P00 following a premature termination of P23 (before a mark acceptance). Or simply do a V93E prior to accepting first mark, following that selection of P23.