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COLOSSUS Memo #69

To: Distribution

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Subject: COLOSSUS Revisions 218 and 219

Revision 219 was BAD with 3 cusses.

Major Changes Incorporated into Revisions 218 and 219

1) VHFRFLG is now reset in V37 (PCR #465).
2) The resetting of the DVMONFLG was removed in P11 since DVMON no longer exists after the incorporation of the V97 engine fail logic.
3) VHFRFLG is no longer reset in R22 or P20 since V37 resets this flag (See no. 1 above).
4) After an optics mark has been rejected in R22, a transfer is made now to REND3 instead of REND1. REND3 looks for a VHF mark. REND1 looks for an optics mark.
5) The resetting of the ONMONFLG was taken out of AVGEND in SERVICER since ONMONFLG no longer exists.
6) The ENTRY DAP estimate of roll acceleration was temporarily changed back to its original value until more information can be obtained.
7) Several comments in P40 were cleared up.
8) The ALARM and ABORT descriptions were updated to include comments describing the type of ALARM or ABORT.
9) The bug in the DOWNLINK program which could have resulted in a list going down with the wrong ID was corrected.
10) An incorrect EBANK declaration was deleted from V37.
11) MRKBUF2 is now set to a minus number at the end of R32 to prevent an old mark from being incorporated after R32.
12) A change was put into R32 to zero VHFCNT.

13) Noun 51 has been hooked up to the PINBALL noun table.

14) The JAMIT tag in SXTMARK has been moved up one to cure the problem of incorrectly indexing on QPRET.

15) An unnecessary EBANK setting was deleted out of V37.

16) V37 no longer sets the SUPERBNK to zero since it is unnecessary.

17) The comments on N49 were updated.

18) Bit names were added for all the flagword bits.

19) The unused ONMONFLG was deleted.

20) The unnecessary call to TESTXACT was deleted from V74.

21) The terminate logic on V91 in SUMCHECK was corrected by storing SELFADRS in SKEEP1 to prevent the restarts and other problems which occurred in SELFCHECK.

22) Extended V40 was changed to end in GOPIN instead of ENDOFJOB in order that the interrupted display or a blank DSKY results upon its termination.

23) PCN #464 was implemented. This changes the coarse align threshold from 5^{o} to 1^{o} in CAL53A.

24) A missing TCF instruction resulting from the previous assembly was replaced in CLOCKJOB.

*25) CM/FLAGS was reset in the P40s in order to avoid the SERVICER ENTRY calculations.

26) The JOB PRIORITY of P47BODY was raised from 20 to 30 in order that N83 calculations (which are hooked to SERVICER at a PRIORITY of 20)are zeroed by P47BODY on the first pass before N83 is displayed. The PRIORITY is then lowered again to PRIO15 to protect the response from N83 from interrupting SERVICER. P47BODY has been changed to restart at PRIO30.

27) EGSW is now set in P61 to improve the flight time estimate for the EMS display calculations.

28) The restart 1.5SPOT has been changed to go to REDO40.9 instead of S40.9 to conform to the new S40.9 restart logic.

29) The restart logic in S40.9 was changed to essentially not restart S40.9. Now a restart will go to REDO40.9 which will terminate the old S40.9. A new S40.9 won't start up again until the next pass of steering. The old restart logic was incorrect in that it was possible for HAVEGUES to destroy VINIT and RINIT when in the lunar case. The restart point went to S40.9 directly which expected a good VINIT and RINIT.

30) The MASSPROP call was moved to DOTVCRCS from SPSOFF. This move will help to prevent RUPTLOCKs and the DOWNRUPTs loss problems which previously occurred.

31) A check was added to TVCINIT to leave CSMMASS alone if the engine has already been turned off.

32) A setting of MAX deadband was deleted at the end of P40 since GOTOPOOH now restores the deadband to that last set up in R03.

33) The restart protection of DOSPSOFF in P40 was corrected to be type A with the TBASE set instead of type B.

34) The optics DAC is now disengaged in S40.6 and re-engaged at the end of TVC. The prevents TVC from driving the optics regardless of where the position of the optics mode switch is.

35) The RCS is now started up in 3.1 sec, not 3.16 sec. in ROOTOPOO.

36) A call to MASSPROP is now made in ROOTOPOO since SPSOFF now no longer calls it.

37) The N69 display in P65 was incorrectly restarted to be set up twice. This bug resulted in a normal display on top of a normal display ABORT. This bug was fixed.

38) The terminate response on the N41 display in V65 (P03) was incorrectly going to GTSOPTCS which turned on ALARM 1602. This was corrected by sending the response to GCOMP5 which terminates the program.

39) TVC initialization was restarted with the result that TVC never started again. This bug was corrected.

Known Problems in Revision 219

1) V80 and V81 are checking the wrong flag for R32.

2) V65 is doing a GOPIN in the wrong place.

3) Several program descriptions are out of date. These should be updated.

4) V82 erasable HAPOX is conflicting with THETA(1) +1 which is also in V82.

5) Some extended verbs have mark displays and normal displays mixed. If a normal display occurs after a mark display the bit 1 of FLAGWRD4 which is set by a mark display will lock out a normal display.

6) Extended V82 does a V04N06 display and so do P21, P52, P38 and P37. This results in an erasable conflict because both the extended verbs and the normal programs use the same erasables for N06.

7) RTEVGAM, PBIAS and YBIAS (10 words) are now in fixed memory but the GSOP specifies them as erasables.

8) PINBALL does not wake up displays sleeping due to astronaut use on any loads. Either a change should be made to PINBALL or ASTRONAUT decks will have to be changed.

9) The polynomial fit for T(X) in TFF should be changed to include a wider hyperbolic range.

Potential Problems

1) P03 does not always drive the OPTX trunnion to the correct angle for target no. 2 after a good mark is made on target no. 1 (STL).

2) The optics stops test in T4RUPT does not initialize Z1 on the first pass (RG).

Program Note

17) When loading decimal data into the AGC, the ENTER sometimes changes the last digit of the loaded value since PINBALL roundoff in decimal/octal/decimal conversion occurs when data is keyed in (decimal to octal) and entered and redisplayed (octal to decimal).

Statistical Summary for COLOSSUS 219

1)	Number of modification changes	40
2)	Number of cards	490
3)	Total fixed memory changes	+19

Versions

The only COLOSSUS version that is being tested at this time is HUGHEXEC which contains a revised EXECUTIVE.

* This was later found to be the incorrect tag for the flag. It should have been CM/DSTBY.