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COLOSSUS Memo #260

TO: Distribution

FROM: N. Brodeur

DATE: 10 March 1970

SUBJECT: Revisions 25 through 28 of ARTEMIS

Revision 28 of ARTEMIS was GOOD. The following changes were incorporated into Revisions 25 through 28:

1. The order of the variables in unswitched erasable (EBANKs 0, 1, and 2) was changed to prepare for the use of erasable programs for prelaunch performance tests. The new configuration is needed to avoid conflicts with the new programs which will be loaded into erasable memory via a K-start tape. (PCR 857)

2. Stroke test was deleted. Extended Verb 68 is now a spare. Logic in the TVC DAP and DAP restarts which had to do with the stroke test was also deleted, as were the erasables in EBANK6 which were reserved for the stroke test. (PCR 822)

3. Coding and V37 entries for P31 were deleted. (PCR 917)

4. A check on Bit 3 of OPTMODES was added in the V37 logic. If V37 is selected when this bit is 1 (during optics zeroing) the V37 selection will not be performed and alarm code 1520 is issued. (PCR 978)

5. A new entrance, MARKMONR, was added in the Display Interface Routines which allows a V5X mark verb to be posted over a monitor display. R21 and R23 were changed to display V51N45 and V53N45 respectively, providing a mark count and TFI monitor during marking. (PCR 290)

6. Logic was added in Pinball so that a decimal load of less than 5 digits will be accepted, just as an octal load is. It is now possible to key in, i.e., +54E rather than +00054E and +E rather than +00000E. (PCR 874.1)

7. Coding was changed in P40 and P41 so that CLOKTASK is initiated at the beginning of both programs to make TFI available. This was accomplished by use of the subroutine COMPTGO. NVWORD1 remains at zero until the time when CLOKTASK was formerly started; setting the appropriate verb-noun value into NVWORD1 starts the CLOCKJOB display at that time. (PCR 872.1)

8. Nouns 19 and 31 were defined as spares and the corresponding values in the PINBALL noun tables were changed to zero. (ACB 104)

9. UPRUPT was modified so that during ground testing only (there is a check on NODOPO1 flag) the number of uplink key codes is counted and each key code is summed and stored in a newly defined erasable UPSUM. The keystroke count is kept in UPSUM+1. (PCR 991.1)

10. References to Bit 1 of OPTMODES were deleted. (PCN 994)

11. The values of the Star Tables and the constants NODDOT, FDOT, BDOT, NODIO, FSUBO, BSUVO, WEARTH, ECL1POL and 1/C were changed according to 1970-71 ephemeris data. (PCR 986.1)

12. 4.55SPOT in the Restart Tables was changed to use a negative priority so that P65.1 will be restarted as a NOVAC job. (ACB 103)

13. Three values in the Entry Final Phase Reference Table were changed. (PCR 288)

14. The double precision constant V(21K), formerly defined as 64.000 B-7, was corrected to 64.008 B-7. (COM32)

15. AZO was deleted from erasable and was defined as a fixed constant of 2DEC .7739945637 (REVS). (PCR 821.1)

16. A new log section containing ECADR's of locations for updates was added. A reprint of this log section will be included as part of Section 2 of GSOP so that the absolute addresses given in Section 2 will always be consistent with the actual program. (ACB 100)

17. P17 and P77 were deleted. This involved deletion of the TPI Search Log section, deletion of entries in the V37 tables, deletion of erasables reserved for P17 in EBANK5, EBANK7 and making N72, formerly used for P17, into a spare. (PCR 916)

18. The uninhinted call to ZEROEROR in KALCMANU STEERING was corrected. (COM 33)

19. P37OALRM was eliminated as a subroutine and RTEALRM was modified to do the alarm directly with a fixed return. (ACB 110)

20. The exit from LONGCALL was changed to use the subroutine SUPDXCHZ rather than the simple DTCB so that tasks located in high Superbanks can be called via LONGCALL. (ACB 105)

21. Unused constants EBMARKDO and EBMRKBUF were deleted. (ACB 106)

22. STARTSIM was replaced for Level 2 testing.

23. VECPOINT was modified to exit always with Pushdown counter set to zero. P20 logic (R61) was changed to use desired rather than actual gimbal angles for rate drive maneuvers. (PCR 860)

24. The rate drive in R61 was modified to establish LOS rate plus about .05 degree/ second in the direction of the preferred tracking attitude when the attitude reference is outside the deadband but less than 10 degrees. (PCR 859)

25. A time delay option was added to R64. V06N16 (R1, R2, R3=0) is displayed initially; a PROCEED with zero time causes the selected rate control to be immediately effective. A non-zero time (G.E.T.) may be loaded which will delay the implementation of the selected rate control until the specified G.E.T. The uplink activity light is turned on when the rate control starts. This option is not available during P00; if R64 is selected during P00, the V06N16 display is bypassed and rate control proceeds immediately with no uplink activity light. (PCR 292)

The following changes were implemented in Artemis Rev. 25-28:

ACB's: 100, 103, 104, 105, 106, 110

PCR's: 288, 290, 292, 821, 822, 857, 859, 860, 872, 874, 916, 917, 978, 986, 991, 994

Anomalies: COM 32, 33