

Massachusetts Institute of Technology  
Instrumentation Laboratory  
Cambridge, Massachusetts

COLOSSUS Memo # 239

TO: Distribution  
FROM: P. Rye  
DATE: 23 December, 1969  
SUBJECT: Revisions 81 through 83 of COMANCHE

Revision 83 of COMANCHE is BAD (5 cusses). The following changes were incorporated into Revisions 81 through 83:

*not done* ~~(X)~~ The flag KFLAG (Bit 1, Flag 0), formerly used in P17, *ART37* was deleted. (PCR 916)

*NA(2)* A new program, P29, was created to provide a display of time-to-longitude. The program utilizes existing P21 logic for vehicle option and time option displays and for integration of the selected vehicle state vector to the specified time. P29 then displays N43 so that the desired longitude may be loaded. The time of longitude crossing is determined and displayed via V06N34 and the corresponding latitude, longitude, and altitude is displayed via V06N43.

The flagword P29FLAG (Bit 1 Flag 0) was defined. It is set at the start of P29 and cleared after the first pass through the P29 logic. It is used both as an indicator to the P21 logic that P29 is operating and as a first-pass switch in P29. P29FLAG is cleared by V37.

New erasables PASSTIME, LONGFOR, DELTLONG, FUDGE, MUSUBC, MUSUBS, AND MUSUBN were defined in EBANK 7. (PCR 956)

*NA(3)* The value of AZO was corrected from .7739887606 to .774657643, the correct 1968-69 value. The incorrect value was inadvertently used in the original implementation of PCR 821.1.

- ~~(1)~~ The Powered Flight downlist was changed to include the AK's and RCSFLAG's in words 64 and 65 rather than TET and OPTION1. (PCR 295)
- ~~(5)~~ A correction was made to the check for negative time in the V79 time option logic. (PCR 292)
- ~~(6)~~ An unnecessary first-pass check in the rate-aided optics coding in R52 was deleted. (PCR 869) *Roy*
- NA(7) The unused constants MDOTFAIL and KPIP were deleted from SERVICER. (ACB 107)
- ~~(8)~~ 115 lines of code were deleted in the IMU Calibration and Alignment section. A lead-in for the erasable PIPA check program was added. (PCR 857)
- ~~(9)~~ A new entrance, MARKMONR, was added in the Display Interface Routines which allows a V5X mark verb to be pasted 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)
- ~~(10)~~ The values of the Star Tables and the constants ECLIPOL and 1/C were changed according to 1970-71 ephemeris data (PCR 986.1)

Changes to COLOSSUS GSOP:

Section 1 should reflect the change described in (8) above.  
Section 2 should reflect changes described in (1), (2), and (4) above.

Section 4 should reflect changes described in (2) and (9) above.

Section 5 should reflect changes described in (2), (3), and (10) above.

Anomalies

As of Revision 83, there are no known anomalies.