

Massachusetts Institute of Technology
Instrumentation Laboratory
Cambridge, Massachusetts

COLOSSUS Memo #226

TO: Distribution
FROM: Stephen L. Copps *SLC*
DATE: October 27, 1969
SUBJECT: Final Content and Testing of Colossus 2D
REFERENCE: Colossus Memo #7, Rev. 1
Colossus 2D Development Plan, dated 10/17/69.

The Colossus 2D (COMANCHE, Rev. 72) program is a modification of Colossus 2C (COMANCHE, Rev. 67). The new coding is authorized in one of three ways:

- a) PCR/PCN's
- b) Colossus Anomalies (COLXX or COMXX) requiring no PCR; i. e., requiring no specification change.
- c) Assembly Control Board authorization (ACBXX), requiring no PCR; i. e., not an anomaly fix and not a specification change.

This memo records these changes:

- Table A: List of PCR/PCN'S
- Table B: List of Anomalies
- Table C: List of ACB'S

All changes made to this assembly were unit tested (levels 2 and/or 3) and the following table lists the level 4 test performed on the released version of Colossus 2D (Rev. 72)

Carbon copies of all level 4 tests (computer printouts) will be sent to Stan Mann at NASA/MSC.

TABLE A

PCR/PCN's Contained in the Colossus 2D Release

PCR 806.1 Allow N07 to address output channels
PCR 863.1 Make P76 Set NODO flag.
PCR 936.1 Initialize V90 time to TIG
PCR 963 R52 - Delete 407 Alarm and drive trunnion to 50°
PCR 966 Clear preferred Orientation Flag in P40/41

TABLE B

Anomalies fixed in the Colossus 2D Release

- COM 21 Backwards Integration can occur in P27 uplink.
- COM 22 V79, V41, V55, V42, do not perform CCS new job.
- COM 24 Coding in iterator
- COM 26 Extended Verb 92 Flg 6 is changed while job is not in INHINT
- COM 27 V32E response to FLV16N45 in P37 results in indeterminate program transfer.
- COM 29 N70 instead of N71 display in P23

TABLE C

ACB's in the Colossus 2D Release

- | | |
|--------|---|
| ACB 91 | V2X proceed response currently destroys content of R1, R2, R3 and returns to the V21 point of load. |
| ACB 97 | Delete redundant line inadvertently inserted in implementation of PCR 810. |
| ACB 98 | Delete INHINT before FINDVAC in V89. |
| ACB,99 | Remove DSP2BIT in pinball game buttons and lights. |

Level 4 Tests Run on Colossus 2D

<u>TEST NO.</u>	<u>DESCRIPTION</u>	<u>COMANCHE REV</u>
C4.1	Nominal Boost With Saturn V, With IMU Realign-Digital	72
C4.2	Boost With Late Abort - Digital	72
C4.3	Boost With Early Abort - Digital	72
C4.7	Cis-Lunar Navigation With IMU Off - Digital	72
C4.8a	Lambert SPS Burn Sequence, CSM-LM Docked - Digital	72
C4.8b	Lambert SPS Burn Sequence, CSM-LM Docked - Digital	72
C4.9a	Lambert RCS Burn Sequence With Update - Digital	72
C4.9b	Lambert RCS Burn Sequence With Update - Digital	72
C4.10	RTE From Near-Earth Orbit, With SPS Burn	72
C4.11	Return To Earth From Far-Out Orbit, With RCS Burn	72
C4.12	Deorbit With SPS Ext. Burn, Update	72
C4.14	Backup IMU Alignment Sequence - Digital	72
C4.19a	CM Active Rendezvous and State Vector Update - Digital	72
C4.20a	LM Active Rendezvous With Update and Navigation-Digital	72
C4.20b	LM Active Rendezvous With Update and Navigation-Digital	72
C4.25a	SOR-SOM Sequence With Navigation - Digital	72
C4.25b	SOR-SOM Sequence With Navigation - Digital	72
C4.26a	CSI Back Up Sequence With SPS Burn - Digital	72
C4.26b	CSI Back Up Sequence With SPS Burn - Digital	72
C4.27a	CDH Back Up Sequence With RCS Burn - Digital	72
C4.27b	CDH Back Up Sequence With RCS Burn - Digital	72
C4.28a	IMU Power Up, TPI Targetting - Digital	72
C4.28b	IMU Power Up, TPI Targetting - Digital	72
C4.29a	TPI Search - CM Active - Digital	72
C4.29b	TPI Search - CM Active - Digital	72
C4.30a	TPI Search - CM Passive - Digital	72

<u>TEST NO.</u>	<u>DESCRIPTION</u>	<u>COMANCHE REV</u>
C4. 30b	TPI Search - CM Passive - Digital	72
C4. 31a	LM Active SOR-SOM Sequence With Navigation - Digital	72
C4. 31b	LM Active SOR-SOM Sequence With Navigation - Digital	72
C4. 32a	CSI-CDH Sequence	72
C4. 33a	CDH-TPI Sequence	72
C4. 34a	CSI, CDH Back Up	72
C4. 34b	CSI, CDH Back Up	72
C4. 35a	CDH-TPI Back Up	72
C4. 35b	CDH-TPI Back Up	72
C4. 36	CSI- SPS burns	72

a = Test in Earth Sphere

b = Test in Moon Sphere