

Massachusetts Institute of Technology
Instrumentation Laboratory
Cambridge, Massachusetts

COLOSSUS Memo #237

TO: Distribution
FROM: P. Rye
DATE: 15 December 1969
SUBJECT: Revisions 76 through 80 of COMANCHE

Revision 80 of COMANCHE is good. The changes included in Revisions 76 through 80 are as follows:

- ~~X~~) Three values in the Entry Final Phase Reference Table were changed. (PCR 288)
- ~~X~~) 16 erasables in EBANK7 which were formerly used for P17 were deleted. (PCR 916)
- NA3) The program descriptions of P40-P47 subroutines were updated.
- ~~X~~) 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 e.g., +54E rather than +00054E and +E rather than +00000E. (PCR 874.1)
- NA5) Some code-saving changes were implemented in Pinball in order to make room for the above. The task TSTLTS2, the purpose of which was to make a job call to TSTLTS3, was deleted. The WAITLIST call to TSTLTS2 was changed to call TSTLTS3 directly via a DELAYJOB. The redundant definitions for ELRCODE1 and BRNCHCON were eliminated by equating these to existing constants. The unused subroutine DSPDECNR was deleted and ENTERJMP was replaced by existing identical coding. (ACB102)
- ~~X~~6) Extensive coding was added for Rate-aided optics: (PCR869, PCR987)
 - ~~X~~6.1) Entries were added to the V37 tables for P24.
 - ~~X~~6.2) Three new flags were defined. P24FLAG (Bit 14, Flag 9) is set by P24 and cleared in V37. P24MKFLG (Bit 3, Flag 2) is cleared in the initialization of P24 and set in MARKRUPT when a mark is taken during P24. NEWLMFLG (Bit 14, Flag 8) is cleared in the initialization of P24 and set in R52 when new landmark coordinates are computed.

~~6.3)~~ Four unshared single precision erasables were defined: TRATE, SRATE, TOLD, and SOLD. These are zeroed in Fresh Start and in V37. In addition, the erasables RATETEMP, NO.PASS, P24CNTR, and PASSCNT were defined in unswitched erasable, and TRTEMP, SRTEMP, PACTEMP, and AOPOLD were defined in EBANK 5. The existing erasables 8KK and 8NN (contiguous because of P22 usage) were moved from EBANK5 to unswitched erasables since 8NN is used as a mark counter for P24 in SXTMARK (EBANK7). NA ^{ART}

~~6.4)~~ P24 coding was created which initializes P24CNTR and PASSCNT, sets P24FLAG, clears P24MKFLG, NEWLMFLG, ORBWFLAG, RNDVZFLG, and RENDWFLG, and initializes the mark downlink area to zero. The program then updates the state vector to present time and exits to existing P22 logic to display VO6N89 and call R52. ?

~~6.5)~~ P22 was modified so that the return from R52 checks P24FLAG and exits from the program via GOTOP00H if the flag is set. Roy

~~6.6)~~ Logic was added in R52 to compute landmark coordinates and shaft and trunion rates if P24 is running. The cycle delay time for R52 was changed from .5 seconds to .05 seconds for P24. The time increment used for predicting LOS was changed from 2.4 sec. to 1.9 sec. for P24. Operation of R52 for other users is unchanged.

~~6.7)~~ Coding was added in MARKRUPT to accept and store for downlink all marks made during P24.

~~6.8)~~ The Mark Reject routine was modified to accept mark rejects during P24 and to complement the time associated with the rejected mark.

~~6.9)~~ The T4RUPT cycle was changed so that OPTTEST is performed every 240 ms. rather than every 480 ms. T4RUPT logic was added to disable the optics error counters if OPTIND is negative. In manual, TVC enable bit is set and optics error counters are enabled. T4RUPT performs rate drive whenever the optics are in manual, using the erasables SRATE and TRATE. These erasables are zero at all times except during P24, thus insuring that rate drive is effective only during this time.

~~6.10)~~ The disabling of the optics error counters by S40.6 was deleted since this is automatically accomplished in T4RUPT.

~~6.11)~~ A check was added to restrict V41N91 to P00 since it is undesirable to perform optics coarse align during other programs.

~~8.12)~~ In R53 a major mode check was added after the return from SXTMARK so that the routine exits immediately if P24 is the current program.

~~NA 7)~~ Three double precision interpretive constants in P32-P33 were moved from Bank 06 to Bank 10 to make room for some of the above.

~~8)~~ The program description of GOTOPOOH was updated. WART37 ✓

~~9)~~ The double precision constant V (21K), formerly defined as 64.000 B-7, was corrected to 64.008 B-7. (Anomaly COM32)

~~NA 10)~~ The KEYRUPT routine was moved from Bank 07 to Bank 10.

~~11)~~ 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 nonzero 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)

~~12)~~ Nouns 19 and 31 were defined as spares and the corresponding values in the PINBALL noun tables were changed to zero. (ACB 104)

~~13)~~ 4.55SPOT in the Restart Tables was changed to use a negative priority so that P56.1 will be restarted as a NOVAC job. (ACB 103)

~~14)~~ 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)

~~NA 15)~~ V06N16 was defined in fixed-fixed memory since its users are located in three different fixed banks.

~~16)~~ Unused alarms 124 and 215 were deleted from the table in the Assembly and Operation section. WART37 ✓ ✓

~~17)~~ Unused constants DEC51, ^BEMARKDO, and ^BEMRKBUF were deleted to make room in Bank 07. (ACB 106)

Changes to COLOSSUS GSOP:

Section 2 should reflect changes described in (6) and (11) above.

Section 3 should reflect the changes described in (6) and (11) above.

Section 4 should reflect changes described in (4), (6), (11), (12), and (16) above.

Section 5 should reflect changes described in (1), (6), and (9) above.

Anomalies

As of Revision 80 of COMANCHE there are no known anomalies.