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COLOSSUS MEMO #225

TO: Distribution
FROM: Ed Olsson
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SUBJECT: Noun 93 during Pulse Torquing

Although the crew procedure documents do not call out the use of V16 N93 during pulse-torquing operations in P52, the crews often use this display during extensive (plane change) pulse torquing as a clue to how nearly complete the operation is. The crew should be made aware that scaling of N93 under these circumstances does not remain XX.XXX degrees.

Pulse torquing is applied successively to the Y, Z and X-axis gyros. As each gyro axis is torqued, the scaling of angle-to-be torqued is changed in order to be of use to the torquing program. Pinball continues to display N93 as if the scaling were unchanged. Approximately each 2 1/2 seconds, the angle in the axis being torqued appears to have been decremented by 0.022°; actually it has been decremented by approximately 1.4°. (8192 pulses at 3200 pulses per second, approximately 0.55°/sec.)

Consequently, during pulse torquing, N93 will initially display proper numbers in R_1, R_2 and R_3. Thereafter the R_2 number will diminish to a fractional degree number and decrement to zero while R_1 and R_3 remains unchanged. Then R_3 will be similarly diminished and decremented. Finally R_1 is similarly treated.

It is suggested that N20 represents a more useful display during pulse torquing. If N93 is called up, the change in scaling should be kept in mind.