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11 February 1969

MEMORANDUM FOR THE RECORD

SUBJECT: CR-6 Flight Readiness Evaluation

1. V. Webb and [redacted] visited AP on 23 and 24 January 1969 to review the test history of CR-6 and advise COS[redacted] as to its readiness for flight on 5 February 1969. The conclusion reached is the CR-6 meets the standards of acceptance that generally guide system buy-off, however, there are some reservations.

2. In the first place, with an accumulation of 93,000 cycles, the system is old in terms of operating life. Against an LOL of 100,000 cycles, this is enough to create considerable discomfort. The accelerated aging resulted from double-testing the system, first for UTB, and finally for STB. Testing included two chamber runs at AP, several AGT runs, and more than the usual number of resolution checks on the collimator. It cannot bear any more testing without forcing a decision on its age. We would have to fly it with a waiver or send it back to the factory for refurbishment.

3. Evaluation of system performance leans heavily on the record from the block resolution test. CR-6 was loaded with STB and a resolution run, which shall hereinafter be referred to as Run No. 1, was made on 4 January 1969. The film record was read and the data recorded. Subsequently, the take-up tension was increased from 36 oz. to 46 oz. and another resolution run was made on 7 January 1969. The low contrast readings were extracted from the film record of this test and the film was destroyed in a general housecleaning exercise and was not available for evaluation. No high contrast data were taken from this test. On Run No. 1, the disparity between the high contrast data taken from the aft instrument in the scan direction and that taken in the IMC direction was sufficiently great to trigger investigation. It was discovered that there was a two percent mismatch between the camera IMC and the collimator target drive due to a change in the output value of

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IMC position 13--the position normally used in test. Further, there was found to be about a six percent error being introduced by the yaw sine function generator. These two errors were corrected and Run No. 2 was made. There was no significant change in the low contrast readings, but the high contrast readings degraded by about twenty percent. This presented a classical dilemma. Further aging would have to be suffered by the system if tests were run to find out why two fixes that were supposed to be beneficial actually caused a dramatic degradation. If no further tests were made, the question would never be answered and future systems could not be protected from the same kind of fix.

4. Rationalization now had to take over:

a. The system did meet its low contrast requirement and; as the contractor was quick to point out, buy-off is based on low contrast performance.

b. Any further aging of the system would necessitate flying it on a waiver or returning it to the factory for refurbishment. Having made no arrangements to maintain the ITEK environmental test lab beyond July 1969, the possibility of sending it back for refurbishment seems out of the question. This pervading reality obviously had to influence the decision-making process.

c. There is always the possibility that the degrading factors were in the test set-up and not in the instruments, although intense questioning of the test engineer failed to bear this out.

d. Then there is always the pressure of schedules and the high cost of slipping.

5. Everything considered the recommendation was made to fly CR-6 on schedule with the fervent hope that it would hold together for 8,000 cycles after lift-off. If it does, it should produce its expected quota of information even if the MIP of the aft instrument is below par (the MIP is normally taken from a high contrast scene).

Vernard H. Webb
H/OSP

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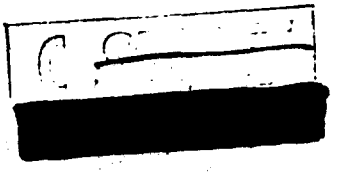

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