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HEX-11113-69

Copy 10 of 14

24 December 1969

MEMORANDUM FOR: Director of Special Projects

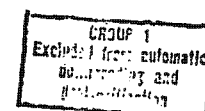
SUBJECT: Photo Reconnaissance Systems Report No. 20

I. CORONAA. Accomplishments1. Mission 1108 Evaluation

The REAGIN 31 message for Mission 1108-1 stated that "instances of image smear (scan direction) and severe out-of-focus imagery are apparent intermittently throughout the mission". To the user community, the word "severe" used in this context usually means that the out-of-focus condition is evident at 7X and above. A Project Office representative viewed examples from Mission 1108 and found that the out-of-focus could be detected only at 25X or above. The NPIC records (including the REAGIN 31) indicate that this is really an out-of-focus band about one inch wide across the entire frame and appears approximately 12 inches from the take-up side. These bands are present only on frames three and four of each pass. The Project Office representative's opinion is that the word "severe" is a bit harsh for describing the conditions that exist. Both the REAGIN 31 and the coordinated PI statement indicate "soft imagery", seen only at 50X and above, from the forward-looking camera.

As a part of this review, it was learned that the Director of NPIC has been provided the following statements:

- a. Both 1108-1 and -2 are about 85% cloud free.
- b. The PI suitability ranges from fair to good. The reduction in the scale because of higher-than-normal mission altitude (after pass D40) reduced the effectiveness of this mission.

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c. The SO-242 color record looks good; however, it generally appears slightly underexposed. The color balance is good, and the material is sharp and in focus. No static or fog traces were noted on the material.

2. 1108/CR-9 recovery was successful (21 December) after a total mission of 17 days. Last two days were devoted to utilizing 800 feet of color film in 14 foreign and one domestic operation. The total accomplished photographic footage for the mission was approximately 15,700' (fwd-looking) and 15,400' (aft-looking); the aft-looking camera had 300 feet less than the fwd because of the additional thickness of the color film.

B. Problems

1. Dr. "A" data on CR-11. Westover has reduced the UTB film flatness from HIVOS Dr. "A" tests and has forwarded the results to Itek. Itek is key punching the data for computer analysis. Initial correlated data may be available by 26 December with a preliminary report expected during the week of 29 December.

2. Switch Programmer. Analysis is continuing on this anomaly. Fortunately the erratic behavior of the switch programmer in the automatic mode was able to be handled operationally by real time commanding.

C. Projected Status

1. CR-9. Mission 1108 PET at NPIC, 13-15 January.
2. CR-10. Pre-chamber preps.
3. CR-11. Block preps.
4. CR-12. Chamber complete; retrieval in process.
5. CR-13. Functional testing.

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II. HEXAGON

A. General

1. The review of the Qualification Test Data for the Supply was held at P.E. on 23 December. The data presented for the tests which had been conducted was extensive and did indicate successful completion of the tests. This review did not cover thermal vacuum test results and was not a complete review of the vibration/acoustic results for the following reasons:

a. P.E. did not measure the deflection of the compliant layer of the core as previously requested by the Project Office.

b. P.E. did not measure the edge profile of the film stacks before or after the tests. This had been required in an early version of TQ-1003 (Test Requirements), but was deleted during a revision by P.E. This was not picked up by SETS or the Project Office prior to the tests, as the Test Procedures document had not been released to the Project Office prior to the tests.

The meeting was concluded with the Project Office signing a preliminary concurrence of the qual test results, subject to resolving the above deficiencies plus a master track frequency anomaly on the supply encoder.

B. Engineering Model

1. The thermal tests were terminated at 1800 hours on 23 December. No further tests are planned at this time because of the need to install verification packages on the Chamber A collimators and the requirement for the Development Model to enter Chamber A on 16 January 1970 if it is to be shipped on 27 February.

2. No information was obtained on transient response, which would allow an evaluation of the launch thermal transient, nor on the film sticking characteristics of the system.

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3. The chamber utilization schedule is being re-evaluated to determine if some further testing can be accomplished at a later date.

C. Development Model

Integration and checkout of the TCA in the midsection is continuing. The supply is scheduled to be installed in the midsection on 26 December.

D. Flight Article #1

1. The model went into Ready Room B on 19 December. Both optical bars have been checked out with their servos. Double commutation of the optical bar motor has not yet been incorporated. The bars do not meet the ramp-up time requirements with the single commutation, but there is apparently no problem in proceeding with the tests.

2. P.E. is evaluating the impact of running a 32 calendar-day test in Chamber A on P₁. The Chamber A tests would include photographic performance at 40, 47, 70, 93, and 100 degrees fahrenheit. They are also evaluating the impact of performing the 20 critical test point EMC test on P₁.

E. Flight Article #2.

One of the optical bars failed Chamber D optical tests. The surface flatness of the fold mirror degraded for $\lambda/13$ in Chamber C to $\lambda/7$ in Chamber D. A coating anomaly appears to be the problem. The bar has been sent back to OOD.

F. Program

1. A meeting was held on 16 December with General King and Col. Buzard regarding the realism of the present Development Model schedule. The outcome of the discussion was that Col. Buzard and Mr. Patterson would review the schedule with the contractors and that General King would sit in with the Managers' Meeting on 18 December and determine whether or not any change should be made in the Development or Flight Model schedules.

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At the schedule review, the various SPO contractors stated confidence in being able to meet the existing schedules and therefore General King was advised that the SSPO would take all the steps that were reasonable to hold to the same schedule. It was agreed that some of the steps to be taken were the transfer of the optical qualification testing from the Development Model to the First Flight Model, and that the EMI critical test point measurements would be moved to the First Flight Model if, at the time of EMI testing of the Development Model in mid-January, other contractors were still on schedule. It was apparent from the schedule review that the Development Model is the pacing item in the program and that there is considerable slack in the present First Flight Model schedule. All parties except the SPO and Aerospace felt that the 75 days allotted for pad checkout were excessive and that at least 30-45 days could be taken out of that time. No agreement was reached on this matter. At the end of the schedule discussions, General King transmitted a TWX to Dr. McLucas stating that he considered the 17 December flight date still valid and that the program offices would take such steps as were necessary to maintain that date.

2. Also discussed with General King on 16 December, and with [redacted] Major Rosenberg and [redacted], was the software development program at TRW. Several of the sensor subsystem software commands were not included in the software program. These were reviewed in some detail and it was apparent that some of them were very important to the operation of the sensor while others were only of convenience. No estimate was available on the cost or schedule impact of incorporating the various items in the program. It was finally agreed that [redacted] and the SSPO would review all of the items and would categorize them into (1) Mandatory, (2) Major Impact on Performance, (3) Desirable for Operations, and (4) Can Be Omitted. A meeting was held at LMSC on 17 December at which time all of the items were placed in the above categories. It is expected that [redacted] will negotiate a change in their contract with TRW to incorporate categories 1 and 2 into the IOC and category 3 into the FOC. These changes will be reviewed at the time of the CDRs on respective software packages.

3. A draft of the RFP for follow-on procurement was reviewed by OSP personnel and [redacted] of SETS. Several changes were recommended to the draft and these are being incorporated. It is hoped that the RFP

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will be revised and ready for issue early in January. It is understood that the contractor is submitting a TWX stating that late receipt of the RFP may impact his ability to respond by 30 April. Normally, a 90-day period for such response should be adequate, however,

III. Administrative**A. Meetings Requiring Participation of Headquarters Personnel**

<u>Date</u>	<u>Subject</u>	<u>Attendees</u>
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SPO

30 Dec	TBAT Comments Consolidation	<input type="text"/>
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ITEK

30 Dec	Tech Data Book Update	<input type="text"/>
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B. Annual Leave

1. The following personnel will be on annual leave for the period 29 December through 2 January.

2. Mr. Patterson will be on annual leave on 2 January.

~~MERRY CHRISTMAS!~~

PMO/PRS/OSP

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