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BYE-107365-70
Copy 10 of 14
28 May 1970

MEMORANDUM FOR: Director of Special Projects

SUBJECT : Photo Reconnaissance Systems Report No. 42

I. CORONA

A. Accomplishments

1. As of R plus 7 day, Mission 1110 is operating satisfactorily. The first bucket is approximately 71% complete.

2. The CR-13 post-HIVOS critique has been completed. Data evaluation resulted in the acceptance of the test. The instrument failsafe reported last week apparently was caused by the initiation of another operate prior to the preceding operation 20 second relay opening. The procedure has been changed to prevent recurrence.

3. The QR-2 post-HIVOS critique was also completed. All data are acceptable. The problem reported last week has been traced to a scan head potentiometer. Replacement has been completed, and the necessary retest is in progress.

4. Software support of CORONA Mission 1110 is being successfully accomplished in Building 156.

B. Problems

None.

C. Projected Status

1. CR-12. Post-storage.

2. CR-13. Block preps.

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SUBJECT: Photo Reconnaissance Systems Report No. 42

3. QR-2. Block preps.

4. CR-14. HIVOS.

5. CR-15. Temporary storage.

II. HEXAGON

A. General

1. The revised sync flash calibration program (SYNCER) was transmitted from the WCPO to Westover, P.E. and Headquarters along with sample output report data. This program will be used with P-1 test data.

2. P.E. presented some of the results of the P-1 EMC qual tests (critical test points) at the Monthly Technical Review. Of the eleven points evaluated, ten appear to have passed the test. On the other point (IMC input to the metering capstan), there appears to be no safety margin. Six db safety margin is the requirement. P.E. is checking the data to verify the results. Five additional test points were measured (for a total of 16), but conducted susceptibility data at the box level has not yet been measured for these.

3. P.E. has decided to fix the optical bar creep problem. P-1 tests have not shown a phasing problem; however, the Development Model and P-2 optical bars have been out of phase as a result of the bars creeping. The fix is planned for all flight models.

4. Eastman Kodak's facility conversion to the low RH environmental conditions is on schedule. Spooling operations are expected to commence next week (3 or 4 June). Note that while the spooling equipment will be back in operation, there are still other areas still requiring conversion. This will not impact film deliveries currently scheduled. The schedule for low RH film production is mid-August.

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SUBJECT: Photo Reconnaissance Systems Report No. 42

5. An initial load (80 gals. each) of MX-641, MX-819, and Modified B chemistry is being sent to the West Coast to allow P.E. to commence film processing tests which the Project Office urged them to begin in March. P.E. now claims that performing these tests will delay P-2 by 19 days. The Project Office does not concur with this at all.

6. A Design Improvements Status Review was held at P.E. on 26 May. The significant points of this meeting were:

a. Emergency Shutdown

P.E. was directed at the meeting to consider as part of the study the emergency shutdown of a single camera. The approach P.E. was taking was to have the entire system shut down until the next tracking station contact even if only one camera had a failure. P.E. had also simplified their study approach by shifting into the start/stop mode so that servo phase down was much easier.

b. Brush Motors

P.E. has, through necessity, changed the approach they were taking on the brush motor studies. Because of inertia limitations on the smaller motors, they are unable to use a motor with a rotating armature. The major gains (part count reduction) can still be realized by using the present motors, while the electronics switching would be accomplished through a slip-ring commutator arrangement rather than via the present brushless motor electronics. The result will be an inside-out motor that does not need to be requalified except for the slip-ring components. The brush material studies completed to date are promising in that low wear rates and contact resistances are being experienced.

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SUBJECT: Photo Reconnaissance Systems Report No. 42

c. Super Looper

The presentation on the super looper studies was somewhat disconcerting. P.E. stated that they agreed with the SETS analysis which shows that the increased flexibility of the system will yield only a small (2.6%) increase in film efficiency. P.E. also stated that they had no information on the system benefits of the side effects of the super looper (elimination of pressurization, simplification of take-up builder roller operation, possible elimination of active thermal control) as they did not feel that these gains were worthwhile. (It is true that other effects would have to be studied, i.e., corona, film curl, etc.) P.E. was instructed to quantify the benefits of the above changes in terms of reliability and cost and to identify the extent of testing necessary to evaluate film curl and corona.

d. In-Flight Changeable Filter

Progress is being made toward implementing the in-flight filter design on Flight Model #7. P.E. (OTD) is designing and will manufacture the support electronic boxes.

C. Development Model (SDV-3)

1. Forward Section - The twist test was completed on 23 May. A single incident of payload misstacking occurred on side "A" during the passage of a "bowed" portion of film. As no other anomalies were noted, it is concluded that structure deformation, at least to the extent of that present during this test, will not significantly degrade payload tracking. The forward section is presently undergoing a pneumatic leak rate check, and preparations are underway for a light leak test to be conducted on 28 May.

2. Mid-Section - The supply reloading into the midsection took longer than expected, due to a leaking boot at one of the attachment fixtures. After the supply was reinstalled, an attempt was made to

SUBJECT: Photo Reconnaissance Systems Report No. 42

run the R&I test procedure. After several sequences, however, the "A" side platen was heard to hit the stops, and the camera was shut down. Subsequent trouble shooting has failed to reveal the cause of the problem. If the platen were repaired by the morning of 28 May, the earliest realistic mate date is 2 June, including working the holiday weekend.

D. Flight Article #1

The Platen "A" servo problem during recycle has reoccurred. It appears that some of the motor windings are not being energized. The exact cause of the problem has not yet been determined. The midsection will not start into Chamber "A" until the above problem has been resolved.

E. Flight Article #2

Following the incorporation of the previously reported ECO's, cables, etc., P-2 is expected to run the TCA for record on 29 May. Both the "A" side and "B" side have been satisfactorily operated independently.

III. Meetings Requiring the Participation of Headquarters Personnel

Date	Subject	Attendees
P.E.		
4-5 June	Operations Discussions with Gen. King and Col. Buzard	Patterson
RCA		
Week of 1 June	P2-1 Acceptance Tests	

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SUBJECT: Photo Reconnaissance Systems Report No. 42

Date	Subject	Attendees
SETS		
2 June	SSTC CEI Spec Review	
3 June	Modify Test Program per Revision D of the Performance Specification	
WCPO		
4 June	Develop Response to SSTC CEI Specification	
HQS		
2-3 June	CCR Negotiations	Patterson, and Staff
2 June	RadInc Presentation	Staff
3 June	(PM) P-1 Risk areas	Patterson, Kohler,

/s/

PMO/PRS/OSP

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