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BYE-108124-71
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26 March 1971

MEMORANDUM FOR: Director of Special Projects

SUBJECT : Photo Reconnaissance Systems Report No. 85

I. CORONA

A. Accomplishments

CR-14 (Mission 1114) was successfully launched on 24 March 1971 at 2105Z. All systems are operational, and the cameras appear to be functioning normally.

B. Problems

The gas use rate of the attitude control system is quite high, resulting in an expected six to seven day total mission, vice the normal nineteen. The SOC will increase the camera "operates" today to be compatible with the expected lifetime. The exact cause is unknown, at the present, but the dead band of the attitude control rate sensors appears to be too narrow, resulting in more firings of the control system thrusters than normal.

C. Projected Status

1. CR-15. R-25 Backup.
2. CR-16. Block preps.
3. CR-8. Tracking tests.

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II. HEXAGON

A. General

1. The follow-on negotiations for Flight Units 7-12 were successfully completed on 19 March with signatures obtained on the memorandum of negotiations on 24 March. Agreements reached were for a $75 million target cost with a 15% maximum fee, split between an 8% basic fee with cost and schedule delivery penalties and a 7% performance fee with penalties for schedule delays in the field and non-optimum on-orbit performance achievements. It was further agreed that all spares currently under procurement for the follow-on systems would be accounted for, from a cost point of view, as part of the $4.1 million allocated under DH-7776. Also, it was agreed that the Project Office would seriously consider having PE refurbish takeups, if cost, schedule and technical considerations were generally similar to or better than RCA's. Further, the Field Services Contract for FY 72 was negotiated at $5 million, including an 8% fee and 280,000 manhours of effort. The PFA contract for FY 71 was also negotiated for approximately $271,000 for 75 manmonths of effort, the total cost including an 8 1/2% fee. Despite strong contractor insistence that the question of film taper be added into the follow-on negotiations after that had been agreed to, the final agreement includes only the current film specifications.

2. A Structural/Mechanical IFWG was held at SVIC on 18 March 1971. The significant points covered were as follows:

a. The SBAC/Aerospace analyses of the ascent loads have been completed, and no changes to the present ICD loads will be requested.

b. SBAC and Aerospace have a disagreement about the data from the shroud separation pyro tests. SBAC claims that the ICD loads have not been exceeded

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while Aerospace is taking the position that the most forward mounted compartment boxes will see levels higher than the ICD calls out. SBAC is to complete the analysis by 2 April. TRW feels that Aerospace is being overly conservative and has been tasked to review the electronic box qual data to have the box margins defined by the time SBAC completes their analyses.

c. The SBAC/Aerospace analyses/tests of the uncaged supply interface loads are continuing against the following schedule:

(1) 1 April - Aerospace to have the initial results of their analyses

(2) 15 April - Aerospace to complete their analyses

(3) 30 April - SBAC to complete their static tests

d. The SPO IFWG chairman described additional RV ejection tests the SPO would like to conduct on SDV-III to evaluate the APSA loads. This must be considered in terms of SSPO needs for other uses for SDV-III hardware.

3. EK is becoming receptive to the idea of selecting film for all large film stacks on the basis of taper vs. length. This approach appears to be more practical than hardware changes to the camera system. The possibility of delays in AVE testing will continue to exist until the test film now at Danbury and the west coast can be replaced. The Project Office will meet with EK, RCA, and PE next week to examine further the takeup tracking and stacking problems. It is currently planned that PE will perform a series of tests on the Engineering

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Model to investigate the feasibility of any possible system changes to solve this problem. EK will provide approximately 27,000 feet of film with 80 millionths taper for these tests. The film should be delivered about 2 April. Further, until a fix is found, EK will be requested to "tailor make" each 110,000 foot roll to insure that there will be no program delays attributable to the film. This is expected to increase film roll manufacturing time by approximately 50%. Cost increase is not known as yet, but is being worked by EK (Kodak Park) management.

4. SV-1's flight load of film was delivered to the west coast on 25 March. Both of these rolls were "tailor made" by EK to insure that there were no film segments having an edge-to-edge thickness difference (taper) greater than 60 millionths of an inch. The two backup rolls should be available approximately 15 April.

5. PE's acceptance tests on the second set of spare SSTC cards commenced this week and will be completed next week.

6. [redacted] budget of approximately $300K for FY 72 support of HEXAGON was received this week and appears in order. $112K is for west coast computer and recording equipment consumables (magnetic and paper tape), $30K for spares repair and overhaul, and the balance for TFE and AGE spares.

7. The March Orbital Operations Policy Subgroup (OOPS) meeting was held at the SPO office on 18 March 1971. A large number of policies were reviewed and approved; however, most were in regards to the command programmer and SCF. One policy submitted by the Contingency Plan Subgroup was deferred to the Managers Meeting. This policy was in regard to deleting payload operations in the event of tape recorder failure. Payload operations would be deleted until a new command

message could be generated with tape recorder two included. WCPO concurred with the policy for first flight but felt that on following missions, [redacted] should evaluate the impact on the targets that would be deleted.

8. The software to support data transmission from the WCFO SSTC's to the IBM 360/65 has been modified to permit multi-programming in conjunction with data transmission. This software has been successfully tested with the reader, printer, punch, and two independent programs executing during data transmission.

B. Model Status

1. Development Model (SDV-III)

The shroud was removed at the pad on 22 March, followed by the removal of RV #3 on 23 March. This RV, containing DM #2 takeup was returned to SVIC on 25 March. The shroud is being replaced today and a rerun of the AGE compatibility test will then begin. Demate from the SV-1 booster is scheduled for 29 March with shipment of SDV-III back to SVIC planned for 30 March.

2. SV-1 (SN-003)

A-1 Chamber testing was completed on 22 March with no significant anomalies. The chamber is being repressurized and system removal is expected on 26 March. Chamber A-1 testing indicates that the excessive heat leak at the viewport baffle has been corrected. However, a further unidentified heat leak would have resulted in the midsection mean temperature dropping to 15°F below the design value if the exterior heat load had not been increased. Analysis is continuing to identify the heat leak, but the possibility exists that the overall radiation shield (cocoon plus MLI) is inadequate. A procedural failure resulted in the system being operated in excess of the 20 minute constraint (for 47 minutes). PE will be required to perform a thermal analysis on those boxes with highest power dissipation to insure that the system has not been degraded.

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3. SV-2 (SN-002)

a. Forward Section

The 4 RVTS continues to experience problems during rewind which have slowed up the test activity. At present functional testing of TUA No. 4 has been completed and preparations are underway for the functional testing of TUA No. 3.

b. Midsection

The A side shutter assembly failed this past week. The "A" side platen has been removed and shipped to Danbury for repair of the shutter mechanism. Meanwhile, the MS has been turned over to SBAC. The platen assembly is scheduled to be returned early next week.

4. SV-3 (SN-004)

Acceptance testing is being delayed while PE conducts engineering tests to troubleshoot a condition of high smear on both SN-004 cameras. Correction of the problem by 29 March will lead to a 30 April ship date.

III. Meetings Requiring Participation of Headquarters Personnel

Date	Subject	Attendees
RCA		
30 Mar	Film Tracking Problems	
30 Mar	Buy-off for P-5-4 Takeup	

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PE

30 Mar (AM)	Briefing for Gen. O'Donnell, Commanding General, TOPOCOMMAND	Hathaway
30 Mar (AM)	Photo-EM Correlation	Kohler,
30 Mar (PM)	OB Gravity Effect Measurements	Kohler
31 Mar	Monthly Technical and Schedule Review	Staff
1 Apr	MS CEI Spec Modifications	

EK

1-2 Apr	PFA Working Session	Burks, Kohler

AD/PRS/OSP

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