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BYE-110589-71
Copy 10 of 14
10 September 1971

MEMORANDUM FOR: Director of Special Projects

SUBJECT : Photo Reconnaissance Systems Report No. 109

I. CORONA

A. Accomplishments

CR-15 (Mission 1115) successfully completed receiving tests and mating during the early part of the week at Vandenberg Air Force Base (VAFB) and is now in a launch ready condition.

B. Problems

Prior to the accomplishment expressed above, CR-15 experienced two problems:

1. During initial VAFB receiving on Thursday, 2 September 1971 a data discrepancy was recorded and trouble-shooting determined the problem to be a malfunctioning commutator. The system was buttoned up and returned to LMSC and a special test run which confirmed the malfunction. The commutator was replaced and the system retested and returned to VAFB Sunday, 5 September.

2. During re-receiving a discrepancy of data during DSR commands was noted and trouble-shooting determined the problem to be in the command box which was readily accessible. A new box was installed and receiving tests repeated for the third time with no anomalies. Mate was accomplished Wednesday and the system is now in a launch ready condition.

GROUP 1
Excluded from automatic
downgrading and
declassification

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C. Projected Status

1. CR-15. Counting down for launch at approximately 2130Z 10 September 1971
2. CR-16. R-25 backup.
3. CR-8. Storage preps.

II. HEXAGON

A. General

1. PE proposed a plan for resolution of the spare 7A1 box (SN 036 - take-up servo electronics) whose data package had been lost. The plan consisted of putting SN 030 in take-up P2-2 and thereby exposing it to the manufacturing and functional tests contained in the assembly and test flow. The box which is replaced in P2-2 and has full documentation will now become the spare. The Project Office feels there is less risk in this plan than putting SN 036 on the shelf for possibly a year to two.
2. One cucumber test roll (26,000 ft.) has been sent to the west coast and two more are to be delivered by the 17th of September to support forward section buildup.
3. Tests will be conducted next week on the Engineering Model using a special test mixed roll consisting of alternating amounts of color and black and white film.
4. One of the two spare 2A1 boxes (platen servo) was put in SN-005 at LMSC this week. PE is to provide the Project Office with cost and schedule data on repairing the failed 2A1. Cause of the failure is a bent connector which rendered the box nonfunctional.
5. The color tests on the Development Model have been postponed from the end of October to the end of November because of higher priority tests on flight systems in Chamber A2.

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6. The RV-3 recovery is proceeding on a schedule to begin the search operation on 1 October and the recovery operation on 16 October. Several questions have come up regarding the usability of the recovered film and the difficulties associated with the recovery. EK has made a worst case estimate that 50% of the film may not be usable. There are some unknowns in the simulation of the water at 14,000 feet (oxygen content, mineral content) and in explanation of the degradation mechanisms. The exposed sheet film fogs; however, the spooled film does not, but loses one stop in exposure. Also, the center portion of the film should be completely unaffected and should contain the areas of main interest.

There are unknowns in terms of location of the RV. An independent impact prediction by FMSAC has confirmed the McDonnell Douglas analysis. The recommended search area also includes the location recommended by the STC. The Navy cannot assess definitively the probability for locating the RV since they have never attempted this operation, but if the bottom contour charts are correct and the side-looking sonar resolution is as good as predicted, they feel that they have a good chance of locating the RV. The Navy also feels that the actual recovery will be straightforward and not too difficult. The PE and McDonnell Douglas structural engineers feel that the RV would be in one piece with the RV canister hydroformed around the take-up.

Finally, proceeding with this operation will demonstrate a capability to recover RV's in the future much faster and with much more confidence in the location and recovery.

B. Advanced Planning & Management Support Activities

Work continues on the derivation of the work statement for the study phase of advanced HEXAGON. The schedule has been revised to permit notification of the contractors on 20 September, a briefing to the contractors on 28 and 29 September

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followed by the letter of intent on 30 September. The overall program schedule provides for a 32-month acquisition program with delivery of the first system in August 1975. This is nine months prior to the launch of SV-18 Block I in May of 1976.

C. Engineering

TRW has been tasked to identify electronic and electro-mechanical design changes that could realistically be incorporated on the SV-13 through 18 buy. Specific criteria for this task include (1) increase in reliability, (2) reduction of the camera dependent failure modes, and (3) simplification of assembly/test processes. The task is to be completed by 8 October.

D. Model Status

1. SDV-III (Development Model)

The lack of availability of an SSTC as a result of the R&I activity on SV-4 has curtailed the rework of SDV-III. As a result the system will not be functional for the special acoustic tests. This is not significant in view of the test objectives, but will delay the reverification of the 6A1 box subsequent to the acoustic test.

2. SV-2 (MS SN-002)

SV-2 is awaiting the return of RV's after which time factory testing will resume. Deposits of oil contaminants have been discovered in the aft section. The deposits resulted from the polyvinylchloride (PVC) sleeving (used on break out boxes) during chamber testing. Plans for cleaning the aft section are currently being formulated.

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3. SV-3 (MS SN-004)

LMSC is completing the post-mate system tests and the sensor vertical baseline is scheduled to begin Monday, 13 September. PE has reported that the OOA cable and box will be delivered by 21 September. Receipt of the box prior to 27 September is necessary to prevent a day-for-day schedule impact---a could-be problem. Based upon integration of prototype box on MS-006, test efforts are not now proceeding as expected (cables too short and diagnostic problems).

4. SV-4

a. Forward Section

LMSC mods on the FS structure continue. Release of structure to PE is expected by 13 September. R&I of articulator No. 2 is in process.

b. Midsection

R&I of the midsection is essentially complete. Excessive noise on the "A" side metering capstan summed error signal has necessitated substantial trouble-shooting. Thus far the source of the noise has not yet been isolated.

5. SV-5 (MS SN-006)

PE is experiencing difficulties in adapting the on-orbit adjust box to SN-006. The difficulties include improper cable lengths and an inability to get the box diagnostics over the ground TM loop. In parallel with this, SN-006 experienced performance anomalies during the initial series of Chamber A acceptance testing. These included extensive corona markings on Camera B, drop-out of the pressure and thermal sensor diagnostics, and a failed DDAS box.

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6. SV-6 (MS SN-007)

Manufacturing buildup activity is continuing. Currently, the supply is being loaded and the two-camera assembly is being loaded into the midsection.

III. Meetings Requiring Participation of Headquarters Personnel

<u>Date</u>	<u>Subject</u>	<u>Attendees</u>
<u>Westover AFB</u>		
13-16 Sept	PFA Final Report Preparation and Review	Burks, Kohler, [redacted]
<u>PE</u>		
16 Sept	Spares Buy-off and Photo Lab Equipment Discussions	[redacted]
16-17 Sept	Program Discussions	[redacted]
17 Sept	SN-006 Performance Review	Burks, Kohler, [redacted]
<u>EK</u>		
14-15 Sept	Film Discussions (color and taper)	[redacted]
<u>HO</u>		
14 Sept	Contract Negotiations	[redacted]

[redacted]
D/PRS/OSP

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