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8 October 1971

MEMORANDUM FOR: Director of Special Projects

SUBJECT : Photo Reconnaissance Systems Report No. 113

I. CORONAA. Accomplishments

CR-15 (Mission 1115-2) recovered material was processed by Westover AFB and the REAGIN-31 issued. Although a report of comparable to 1115-1 was given on 1115-2, no MIP was assigned due to lack of MIP chips, for comparison at Westover AFB facility. The NPIC Tiger Team will assign an MIP rating prior to the PET meeting on 13-14 October 1971.

B. Problems

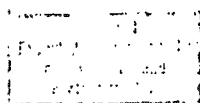
No major problems.

C. Projected Status

1. CR-16 Recycle to backup HEXAGON in November.
2. CR-8 Pre-storage preps.

D. Software

Post-flight software support of Mission 1115 was near completion this week with transmission of the frame ephemeris data based on the recovered tape recorder data. Effort is still under way to recover diagnostic data from the RV-1 tape recorder which had a faulty drive speed. Success of this latter effort is extremely doubtful.

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II. HEXAGONA. General

1. The Project Office was advised by EK this week that the four flight rolls in all probability would produce a wedge buildup on a takeup in excess of the .015 inch that PE says is their safe upper limit. If the .015 were exceeded, it could possibly cause a stacking failure in-orbit. Unfortunately, this notification came one day before the SV-2 flight rolls were loaded. The best two of these four were loaded in SV-2 so buildup and testing can be continued. The other two rolls were sent back to EK where new flight film will be spooled using the new computer assisted spooling procedure. Two rolls are to be returned to the West Coast by 17 October at which time they will be loaded into the system. This exercise could cause about a three-day delay in the 17 November launch schedule. Note that these rolls were built before this computer program at EK was formulated. This problem should not occur in the future.

2. Inspection and modification of the Engineering Model is continuing in preparation for the next series of color film tests which are scheduled to commence 20 October. EK has completed manufacture of another mixed film test roll to be used for this test.

3. PE has been requested by the Project Office to confer on the ULE/Hereaus Glass problems next Wednesday, 13 October. As of this writing, Corning has not commented to PE on the glass specification which PE gave Corning on 29 September. The Project Office desires an official statement on the ULE regarding its future use in the HEXAGON in view of the tightened spec to Corning.

4. EK's FEAT lab conducted an investigation on samples of corona marked film and determined that the discharge was occurring from the emulsion side of the film rather than the base side. This report will be forwarded to the contractor.

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B. Advanced Planning & Management Support Activities

1. The Headquarter's Advanced HEXAGON plan was coordinated with the NRO and was favorably received. As planned, the draft of the Advanced HEXAGON Study Work Statement was reviewed with the SPO. Very few comments were received and no objections were raised.

2. The NRO revised guidance for the derivation of the FY 1972 through FY 1978 program call was worked in detail and appropriate schedule revisions were worked for SSC for use in preparing the response.

3. The RV-3 recovery efforts are proceeding slowly. The Trieste II failed in the second attempt to recover the practice RV. Failure of the navigation computer was the cause. Another attempt is to be made 8 October. The USS De Steiger has repaired the necessary ship equipment and expects to be in the search area by the evening of 8 October.

C. Engineering

1. Recent timing dot measurements by PE and fourier analysis of EM data by SETS have indicated that there is a high frequency error in the cross-track direction of considerable magnitude. Special tests are now being run by PE on SN-007 to gather EM data with the present TM low pass filters removed. If the high frequency error is confirmed, it may explain some of the previously unexplained photo anomalies.

2. RCA is experiencing difficulty in successfully passing qual level vibration testing on P6-4. This test is to qualify the changes that are to be incorporated into the units on the follow-on contract. This has been delaying the deliveries on the follow-on with a resultant impact on the PE incentive fee. PE has given RCA permission to proceed with the SV-7 units even though there is some question as to the validity of the changes. The PE plan is for the Government to accept the unqualified units and bail one unit back to PE and RCA for

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additional qualification testing. The Project Office position is that we will accept the units after the changes are qualified.

D. West Coast Project Office

1. A meeting was held at the STC on 6 October with the SPO, [ ] and the SOC. Mission 1201 was reviewed outlining the problem areas and the solutions to the problems. The parachute problem appears to be the last major problem remaining. SSC covered the SS problems on 1201 and the limitations and operations policies expected to be followed on 1202. This included the max rewind of 35 ips on bucket one.

2. WCPO received orbit case 200 from the STC this week. This is the first of the constant period (zero drag) cases developed by the STC for the orbit library. This case caused some software problems since no previous coordination had taken place between the WCPO and the STC. The problems have been overcome and necessary orbit data for CRYSPER and HAMPER will be provided to Headquarters by 12 October.

3. The CRJE terminal system has been operating effectively during the month of September. Two modifications are currently being studied.

E. Model Status1. SDV-III (Development Model)

Test sequences were completed for the Chamber A-2 color film test on SDV-III. There has been no activity this week on the system itself; however, since the handling equipment and acoustic test cell were required by SV-3, the SPAT II tests will be accomplished following the acoustic test of SV-3. SDV-III will move directly from the SPAT II acoustic tests to the A-2 Chamber unless a conflict should develop with SV-3 A-2 Chamber testing.

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2. SV-2 (MS SN-002)

During two RV drop tests this past week, one of three reefing line cutters failed to fire on test No. 1, and three of three reefing line cutters failed on test No. 2. It appears that there is a high probability that the parachutes and reefing line cutters on SV-2 will now be replaced. If this occurs, we plan to delay the A-2 test date to allow checkout of the A side 37° collimator. A slip in the launch date of approximately three weeks should be anticipated if the reefing line cutters are replaced. The problem is under review by General Allen and his staff and a decision will be made on A. M., 8 October. The supply loading was halted when Headquarters reported that all film stacks had excessive taper. Loading has now been resumed and rolls 1540 and 1730 will be in the system for Chamber A-2 retest. New film rolls are being fabricated by EK and the reference plan calls for a supply reload following the A-2 test. The A side collimators in Chamber A-2 are being reshimmed for infinity focus in an attempt to isolate the cause of the out-of-focus condition experienced on Camera A during Mission 1201-1. It was suspected by the PFA Team that the Chamber A-2 A side nadir collimator was improperly shimmed for the 120 NM reference test focus. Shim thickness analysis done as a result of the infinity focusing now indicates that an error did exist on this collimator or in past tests due to an incorrect shim having been installed in Danbury. The incorrect shim resulted in a defocus of 9 microns on Mission 1201-1.

3. SV-3 (MS SN-004)

The vehicle is currently being moved to the acoustic cell where acoustic testing is scheduled to begin on Friday, 8 October. The system is scheduled to return to the Vertical Integration Stand on Saturday, 9 October, to begin preparation for Chamber A-1 thermal vacuum tests. Current plans call for completion of the A-1 test on 5 November 1971. Following the A-1 test, the RV's will be removed for parachute retrofit. At that time a decision is required on whether the O<sup>2</sup>A<sup>2</sup> box will be retrofitted into the SV-3 Sensor Subsystem.

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4. SV-4 (MS SN-005)

Forward section buildup is in progress and film tracking tests should begin this coming week. The standard R&I runs on the midsection have been completed, however, additional tests will be required as a result of SV-4 mating scheduled to begin on 27 October. These result from:

(a) The retrofit which is being performed on the edge sensors to allow the use of color film with this system.

(b) Adjustments incorporated to correct loss of the SVT word on Camera B at high film velocities.

5. SV-5 (MS SN-006)

PE has notified the Project Office that for schedule purposes the clock has stopped and the system is tendered for acceptance. Members of the acceptance team are at PE today, 8 October, to review the PE data. The Acceptance Team intends to review the contractor performance data and withhold further action until review of the reduced photographic retest data at Westover AFB the following week. Remaining as prime areas of concern are 1) the severe resolution degradation on Camera B at the 0.6 inch slit and 2) meeting of the film synchronization specs.

6. SV-6 (MS SN-007)

The MFN 3.05 series of tracking tests has been completed and the system is now undergoing static discharge (Corona) investigations which are scheduled to be completed 13 October. The MFN 3.09 tests will then commence.

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III. Meetings Requiring Participation of Headquarters PersonnelHQ13 Oct. FY 1972 through FY 1978  & Staff  
Budget Review with PELMSC12 Oct. Operations IFWG 

13 Oct. A&amp;T IFWG Burks

Westover AFB13-15 Oct. Review SN-006 Acceptance  
Data NPIC13-14 Oct. CORONA PET Meeting 

15 Oct. Visual Edge Match Seminar

IV. Personnel departed 8 October for TDY at Headquarters.  
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