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15 October 1971

MEMORANDUM FOR: Director of Special Projects  
SUBJECT : Photo Reconnaissance Systems Report No. 114

I. CORONA

A. Accomplishments

The MIP test for Mission 1115-2 was conducted at NPIC during the week of 4 October 1971. The results of the analysis show slight loss in image quality between buckets one and two. Mission 1115-1 has an MIP of 120, while Mission 1115-2 imagery has an MIP of 110. The PET Meeting for Mission 1115 was conducted at NPIC on schedule 13 and 14 October 1971.

B. Problems

No major problems.

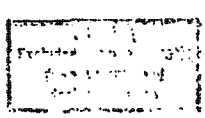
C. Projected Status

- 1. CR-16 Continuing test recycle to backup HEXAGON Mission 1202.
- 2. CR-8 Pre storage preps.

II. HEXAGON

A. General

The De Steiger is proceeding with the RV-3 recovery search operation. They have emplaced the navigation grid and are searching the impact zone. The recovery ships have completed the practice recovery and are proceeding to the impact zone. They are estimating arrival near the first of November.



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B. Advanced Planning and Management Support Activities

1. Review and rewrite of portions of the work statement for the Advanced HEXAGON studies is being conducted by SETS. The efforts are being expended primarily to improve the quality of the work statement per se. SETS and the Project Office plan to complete the final draft at Headquarters next week.

2. The CORONA and HEXAGON Quarterly Progress Report to the NRO was completed and submitted to PPBB.

3. Preparation of the FY 1972 through FY 1978 funding call is in progress. Cost inputs have been received from PE, WCPO, and internal sources. Further refinements of the cost data from PE is required and will be delivered to Headquarters on 19 October.

4. Funds were received from the NRO and a letter of intent type TWX was forwarded to PE this week to initiate the efforts on the Space Transportation Study. The SPO is in the process of finalizing the work statement to LMSC and will advise SSPO of the changes to the preliminary work statement. SPO is relaxing the LMSC report due date to 14 January 1972.

C. Engineering

1. PE will be authorized to initiate study efforts to update the sensor standby and operational failures rates based upon test and operational data. It is intended that generic data from CORONA will be included in this effort. Major emphasis will be placed upon sensor storage and extended operational life.

2. In proceeding with the Mission 1201 data presented to the D/OSP regarding the major short term improvement to be made - mean smear, the Project Office is proceeding with identification of a testing program possibly to be conducted on MS-006.

BYE-110930-71

Page Two

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SUBJECT: Photo Reconnaissance Systems Report No. 114

3. Proposed design changes to the P-13 to P-18 buy were reviewed this week with PE and SETS. Questions were identified on cost, schedule, and reliability which need to be answered before decisions can be made on the P-13 configuration. The total ROM cost of the PE proposed changes is \$3 million.

D. Operations and Systems Analysis

1. Film tilt is a new factor affecting performance that was unknown although suspected to exist six months ago. The phenomenon is a tilt between the rollers during exposure such that the film goes continuously through focus. It appears to be about 24 microns per inch on A cameras and about 12 microns per inch on B cameras. While 12 microns per inch is undesirable, it probably reduces the performance level by only a few per cent. Twenty-four microns per inch is large enough to make a noticeable difference in image quality with wide slit photography. This is no spec on this characteristic, and all of the focus targets currently in use are insensitive to this effect. Since resolution targets are influenced by film tilt, we do have a degree of check during acceptance testing. It is, however, a limited check since the .3 inch slit width used for acceptance purposes is too small to record the full film tilt magnitude. Only in Test 14, where we acquire photography with a nominal mission slit, do we have a real measure of the affect of film tilt on the photography. The large difference on performance between the .3 and .6 inch slit photography (Test 14) on SN-006 is probably due in part to a film tilt that is larger than nominal. We are currently looking into this aspect of SN-006.

2. Sufficient data is now available to quantify film tilt during exposure. The magnitude of this effect is several times greater than previously anticipated. We have, therefore, modified CRYSPER to take this factor into account. A test is being run on SN-002 in Chamber A2 to gather the specific data necessary for Mission 1202 CRYSPER predictions.

BYE-110930-71

Page Three

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~~HEAVEN CORONA~~

SUBJECT: Photo Reconnaissance Systems Report No. 114

3. A Visual Edge Matching (VEM) Seminar is being held at NPIC today. The purpose of this meeting is to go over the Mission 1201 results and to bring everyone involved with them in the community (NPIC, EK, PE, PE WCFO, AFSPPF, Itek, TOPOCOM, NRTSC and Headquarters) up to a common level of understanding. We are going over the equipment modifications and the procedures to be used in the VEM calibration for Mission 1202.

E. West Coast Project Office

Discussions were held with LMSC personnel regarding space for testing and storing takeup systems. Consideration is being given to moving the APSA and takeup activities into Building 152 in areas now occupied by CORONA.

F. Model Status

1. SDV-III (Development Model)

No SSC activity this past week. Vehicle is undergoing preps for SPAT II test. A problem which must be resolved prior to the initiation of test is how vehicle cleanliness will be maintained between the Hi Bay and the test cell.

2. SV-2 (MS SN-002)

Completed post supply installation tracking run. All RV's are now removed for the parachute retrofit. The first RV will be reinstalled on 15 October. The current time lines show the start of the A2 chamber test on 30 October with a 27 November shipment to VAFB. However, if all goes well, this schedule could be improved upon by about five days. The collimator mods are now scheduled for completion on 25 October.

3. SV-3 (MS SN-004)

The vehicle is now back in the Vertical Integration Stand after the acoustic test. The post acoustic test has been satisfactorily completed. Troubleshooting LSFS "B" has been

BYE-110930-71  
Page Four

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~~SECRET~~  
~~HEXAGON CORONA~~

SUBJECT: Photo Reconnaissance Systems Report No. 114

completed. The vehicle will now undergo preps for the thermal vacuum Chamber A-1.

4. SV-4 (MS SN-005)

Currently in process of adjusting the "B" side cross-over to correct the off tracking noticed during R&I testing. Measurements have been made on the steerers which will provide for a later adjustment for color film tracking.

5. SV-5 (MS SN-006)

Reduction of the retest Chamber A data is continuing at Westover. Close attention is being paid to performance of the O<sup>2</sup>A<sup>2</sup> box. The Acceptance Team Report will be prepared this next week in final form. In the interim SN-006 has been "moth-balled" awaiting Government consideration of the performance waivers requested by the contractor.

6. SV-6 (MS SN-007)

Static discharge tests that were conducted this week are being evaluated to determine if further testing is necessary. If no more testing is required, the system will proceed into the MFN 3.09 tracking tests. At least two of the supply caging tapes have broken and must be replaced. PE has tentatively decided to replace these tapes over the weekend.

III. Meetings Requiring Participation of Headquarters Personnel

HQ

19-20 Oct. Advanced HEXAGON Work Statement Meeting  ,

PE

21 Oct. Spares Phasing Plan Meeting

BYE-110930-71  
Page Five

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SUBJECT: Photo Reconnaissance Systems Report No. 114

EK

20 Oct. Film Spec Meeting

Westover AFB

18-20 Oct. SN-006 Acceptance Data Review

SAMSO

21-22 Oct. STS Coordination Meeting

D/PRS/OSP

- Distribution:
- Cy 1 - D/OSP
  - Cy 2 - DD/OSP
  - Cy 3 - D/PRS/OSP
  - Cy 4 - SA/IS/OSP
  - Cy 5 - C/CS/OSP
  - Cy 6 - C/PAD/OSP
  - Cy 7 - AC/SB/OSP
  - Cy 8 - C/SS/OSP
  - Cy 9 - C/PPBB/OSP
  - Cy 10 - DC/D&AD/OSP
  - Cy 11 - RB/OSP
  - Cy 12 - PRS/File
  - Cy 13 - PRS/Chrono
  - Cy 14 - NEPO
  - Cy 15 - WCPO

BYE-110930-71  
Page Six

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