

BYE-110547-71
Copy 10 of 14
3 September 1971

MEMORANDUM FOR: Director of Special Projects

SUBJECT : Photo Reconnaissance Systems Report No. 108

I. CORONA

A. Accomplishments

1. CR-15 (Mission 1115) is undergoing receiving inspection at Vandenberg AFB in preparation for mate to Agena on Saturday, 4 September 1971. A telemetry box problem is being investigated. Impact on the scheduled launch date of 8 September is unknown at this time.

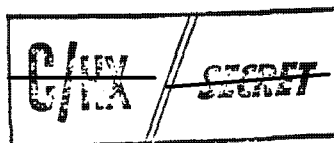
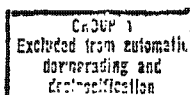
2. Software preparations for the launch of Mission 1115 continue slightly behind optimum schedule due to H-timer verification problems at VAFB. Delays experienced at this time will have no effect on making the 8 September launch, since extra time is included in the countdown to allow for typical verification problems.

B. Problems

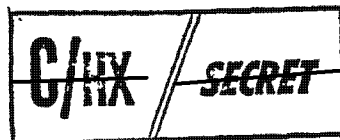
No problems with the exception of CR-15 telemetry box which is under investigation, and will be reported when more details are known.

C. Projected Status

1. CR-15. At VAFB in receiving.
2. CR-16. Proceeding toward R-25 status on 8 September as backup for CR-15.
3. CR-8. Storage preps.



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II. HEXAGON

A. General

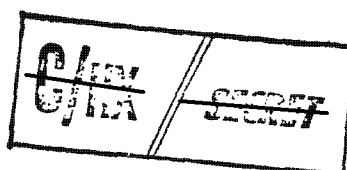
A planning meeting was held with the Navy group (Submarine Development Group I) which operates the Trieste II. The meeting was very informative to both parties. The Navy agreed to build the PE-designed recovery device. A practice recovery will commence on 18 September off San Diego. The Air Force will supply a practice recovery vehicle. PE will support the recovery operation since it is their design. A meeting was also held with [redacted] who is in charge of the search operation. The search area is a box 1.5 miles wide by 8 miles long and the search is scheduled to commence on 1 October. [redacted] felt that it would be very desirable for on-board support to help identify the RV, as among other things, it may be covered with a thin layer of silt. The HEXAGON Program is planning to support this operation.

B. Advanced Planning & Management Support Activities

A draft of the work statement for the Advanced HEXAGON Study has been completed and is being reviewed. It is still anticipated that a package can be released to the contractors by 20 September.

C. Engineering

A Technical Review was held at PE on Thursday, 2 September 1971. The review was much more informal than those previously held and consisted of four members of the Project Office having round table discussions with appropriate PE personnel. Both PE and the Project Office feel that this is a much better arrangement than the previous type of monthly reviews. A separate memo and minutes of the meeting are being prepared; however, brief summaries are provided below:



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a. Optical Bars

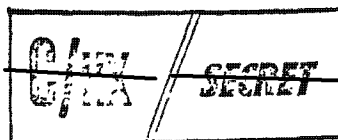
The ULE glass which will be used on P-7 and P-8 is showing degraded performance when compared to the Hereaus glass of systems 1 through 6. PE is analyzing this problem very comprehensively and currently has the ULE set for P-7 (Set 33) in Chamber D. The difference in performance may be due to a configuration change in the glass which was required to accommodate the in-flight changeable filter (part of the field group). More of a comparison can be made in December when a Hereaus set of Optics of the new configuration goes into Chamber D testing.

b. Corona Markings

PE provided data on the corona markings experienced so far. The B Camera has much more corona than the A Camera. The marks are approximately 3.9 inches above the start of frame marks and seem to be inversely proportional to V_x/h . Additional testing is scheduled for the D-Model and SN-006 and SN-007.

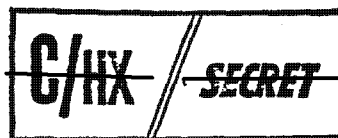
c. Color

Even though there is still disagreement between the Project Office and PE regarding the contractual provisions on color for SV-7 through 12, the tasks required for color testing were defined. For SV-4, 5, and 6, the E-Model tests using a mixed film roll will be conducted. D-Model testing will be conducted on the west coast and edge sensor gains will have to be put in 4 and 6. For SV-7 through 12, E-Model and Abbreviated Film Path testing with varying air pressure is required. Definition of mixed film stacks, thermal and vibration testing on the mixed film stacks, and system testing in-flight systems at Danbury are also required.



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2. The status of the on-orbit knob and skew angle adjust box was reviewed. Plans are to install the first box in the SN-006 midsection and run evaluation tests in conjunction with the repeat of the 70°F acceptance tests. The box will be removed from the SN-006 midsection after the chamber tests and will be subjected to acceptance tests at the box level. The box will then be shipped to the west coast for incorporation into SV-3.

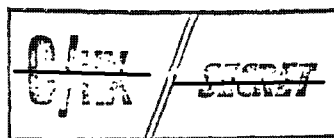
3. The status of the Brush Motors study was reviewed. PE will start material evaluation tests next week. Three weeks of testing should clearly indicate the viability of the brush approach from a materials standpoint. PE was instructed to limit their design efforts to the take-up. The intent is to concentrate the design effort in the area which should result in the largest program cost savings and reliability increase. A meeting to review the results of the above testing and limited design effort is planned for late September.

D. West Coast Project Office

There is no change in software status from the previous report. PE/WCFO will brief WCPO personnel on 8 September concerning HOPE modifications and support plans for Mission 1202.

E. Operations and Systems Analysis

1. A meeting was held with Eikonix, Inc., to review the status of their image quality analyzer. This machine will take the physical fourier transform of an image and make a measurement of the energy distribution with a scanning photometer. Their progress to date is satisfactory with delivery expected in February 1972. There is a parallel program, monitored by AFSPPF, with Eikonix to develop the methods for quantifying the data in a meaningful way. Although these are separate contracts, they are very much related and PRS personnel serve as a tie so that the machine will be built and have a measurement capability to serve our interests in assessing HEXAGON.



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2. The film from the 70° test of SN-006 has been evaluated. The results show the tilt problem that PE has corrected before entering the 47° test. There were no corona markings at the 70° temperature out of spec. The 47° and 93° film are expected at SPPF next Tuesday.

3. New targets are being fabricated for the west coast test chamber. The two targets are:

- a. New line/edge focus target
- b. VEM calibration target

The line/edge target is being constructed so that PE can use the automicrodensitometer for focus assessment while the lines can be used for correlation to deployed CORN targets during the mission. The VEM calibration target will consist of the edges and tri-bar resolution targets going down to 25 c/mm. Plans are to have the targets finished in time for the SN-002 re-retest. There is a fair chance of making it. If these targets work satisfactorily we will probably want to put them in the Chamber A collimators.

F. Model Status

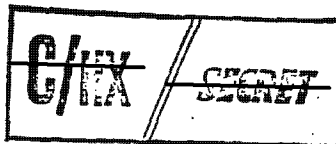
1. SDV-III (Development Model)

Priorities at PE have delayed the rework of Platen B (reinstallation of slit and shutter) until 7 September. This has not affected the acoustic tests since slippage by LMSC in the APSA (mapping camera) rework has delayed the start of testing until 1 October vice 20 September. The utilization schedule for Chamber A-2 indicates the color tests are planned to be conducted from 20 November to 11 December.



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2. SV-2 (MS SN-002)

RV No. 4 has been removed from the vehicle and shipped to McDonnell Douglas for the parachute mods. The RV's are presently scheduled to be returned to LMSC during the period 14-24 September. Present planning is striving toward the addition of the new 37 degree collimator on the B side to allow for a check of the tilt during the next A-2 Chamber test. The schedule is very tight to meet a 17 November launch.

3. SV-3 (MS SN-004)

The midsection has been moved to the vertical integration stand (VIS) and mated with the aft and forward sections. An accident occurred during the mid/forward section mate when a flashlight was dropped into the A side film chute. The flashlight and all significant pieces of the broken lens were recovered from the looper. The film path and looper were thoroughly cleaned to remove any glass particles which could have been overlooked by eye. The need to use tethers on all tests was re-emphasized to all personnel in an attempt to avoid a similar occurrence. VIS systems testing is planned to begin 10 September.

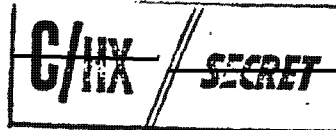
4. SV-4 (MS SN-005)

R&I of SV-4 MS began on 27 August. Pneumatics testing was successfully completed on that date. Two major problems arose during dynamic testing of the MS maneuver which have delayed completion of the R&I cycle. These are (a) "A" platen servo box was found to be non-functional due to bent pins in an electrical connector, (b) optical bar temperature monitors reading improperly probably due to a defective Interface Signal Conditioner and Control Unit. The platen servo box has been replaced by a spare. PE is investigating the cause of the bent pins. Troubleshooting of the OB temperature monitoring system is in process. R&I of forward assembly kit components is continuing.



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HANDLING INSTRUCTIONS
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5. SV-5 (MS SN006)

SN-006 has completed the 3.10 test series (vacuum acceptance). The system is out of the chamber for O₂A₂ modifications and supply change. The retest is scheduled to commence next Thursday.

6. SV-6 (MS SN-007)

The TCA vibration test has been completed. A crossover enclosure at the attachment bracket came loose and this has been corrected. The system will be put in the MS and MFN 3.05 will commence 13 September.

III. Meetings Requiring Participation of Headquarters Personnel

<u>Date</u>	<u>Subject</u>	<u>Attendees</u>
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Vandenberg AFB

8 Sept (tentative)	Mission 1115 R-1 Meeting	
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9 Sept (tentative)	Mission 1115 Launch	
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LMSC

9 Sept	TT&C IFWG	
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10 Sept	Operations IFWG	
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SETS

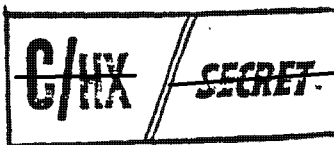
8 Sept	Review Technical Input for SV-1 PFA Final Report	
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Westover AFB

7-10 Sept SN-006 Acceptance
Data Evaluation

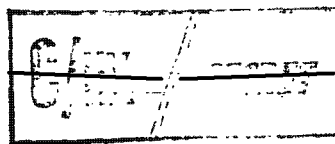
Kohler (8-10 Sept)

8 Sept Tour of Facilities

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 - DC/D&AD/OSP
Cy 10 - RE/OSP
Cy 11 - PRS file
Cy 12 - PRS chrono
Cy 13 - NEPO
Cy 14 - WCPO



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