

~~U/IX // SECRET~~



RB/05

BYE-108580-70
Copy ~~12~~ 9 of 13
10 October 1970

MEMORANDUM FOR: Director of Special Projects

SUBJECT: Photo Reconnaissance Systems Report No. 61

I. CORONA

A. Accomplishments

1. The CR-13 instrument 327 lens cell was shipped to Itek.
2. QR-2 has replaced CR-13 for the 18 November Mission 1112 launch.
3. CORONA software personnel are doing preliminary planning for Mission 1112 and final checkout of CORONA software on operating system version 18.

B. Problems

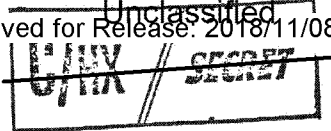
None

C. Projected Status

1. QR-2 Pre-flight preps.
2. CR-14 Back-up preps.
3. CR-15 HIVOS tests.
4. CR-16 Acceptance tests.
5. CR-13 Standby for cell replacement.
6. CR-8 Storage.

~~U/IX // SECRET~~

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY



SUBJECT: Photo Reconnaissance Systems Report No. 61

II. HEXAGON

A. General

1. A fact-finding review for the follow-on contract was initiated on 6 October. Perkin-Elmer was most cooperative in supplying the basic work sheets from which man-loading/task costs were developed. The work sheets will be reviewed at Headquarters prior to a second meeting at Perkin-Elmer to obtain answers to specific questions.

2. The tests of thermal effects on a large film stack which has an initial low core pressure have been completed. The results are that there is no question of film blocking or cinching when the supply is exposed to temperature changes of from 70° to 40° F or from 70° to 100° F and return to 70° F, if the initial core pressure is equal to or greater than 250 psi.

3. An informal review of the qualification test status discloses:

A. The platen has completed 5 of 14 tests planned. The remainder will be conducted pending the availability of test equipment (Chamber E) subsequent to current film stack tests.

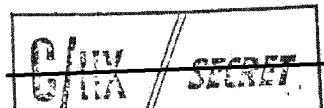
B. The qualification tests on the FEV have been completed, and the report is in preparation.

C. The fifth color band for the longitudinal color test was to have been conducted 8 October 1970, but was cancelled because of test equipment failure. No new date has been established.

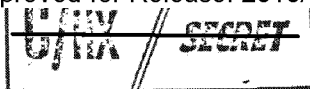
D. The qualification certification meetings for the RADINC electronic boxes will be scheduled for the week of 26 October.

BYE-108580-70

Page Two



HANDLE VIA BYEMAN



SUBJECT: Photo Reconnaissance Systems Report No. 61

4. The HEEP (HEXAGON Exposure and Ephemeris Program) software being prepared by LMSC (OS P contract) personnel in support of the WCPO Operations staff is proceeding on schedule.

B. Model Status

Development Model (SDV-III)

The vehicle is back in the VIS, and the post-pyro shock vertical baseline test was completed on 8 October.

SV-1 (S/N 003)

Forward Section

Buildup is halted, awaiting receipt of RV/TUA from MWC. On resumption of assembly activities, the F/S buildup cycle can be completed in approximately 25 working days.

Midsection

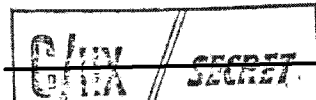
The 93° F tests were completed on 7 October. There were no reported anomalies. The chamber has been repressurized and the 93° F film removed. A retest at 70° F, in vacuum, in Chamber "A" is scheduled for 10 or 11 October. Post-Chamber "A" horizontal and vertical baseline tests should be run during the week of 12 October. Shipment is now planned for 19 October.

SV-2 (S/N 002)

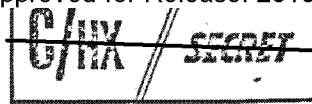
Ready Room "A" tests are scheduled to start on 15 October. The Two-Camera Assembly is in the clean room going through final checkout on the "B" camera. The "A"

BYE-108580-70

Page Three



HANDLE VIA BYEMAN



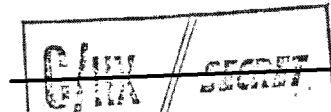
SUBJECT: Photo Reconnaissance Systems Report No. 61

Camera is complete. The supply FEV air bars are being cleaned because of contamination found in the air bars. Chamber "A" tests are scheduled to start on 8 November. The planned ship date is 17 December.

III. Meetings Requiring Participation of Headquarters Personnel

<u>Date</u>	<u>Subject</u>	<u>Attendees</u>
<u>P. E.</u>		
12-15 Oct	Photographic Evaluation S/N 003	Kohler, <input type="text"/>
14 Oct	Spares and Logistics Program Review	<input type="text"/>
15-16 Oct	Electro/Mechanical (E/M) Acceptance Data Review	<input type="text"/>
16 Oct	OSP Technical Advisory Panel	Crowley Patterson, <input type="text"/>
<u>RCA</u>		
14 Oct	P3-2 & 4 Buy-Off	<input type="text"/>
<u>HQ</u>		
13-14 Oct	Review E/M Acceptance Data with SETS	<input type="text"/>

BYE-108580-70
Page Four



HANDLE VIA EYEMAN
CONTROL SYSTEM ONLY

~~SECRET~~

SUBJECT: Photo Reconnaissance Systems Report No. 61

LMSC

13-14 Oct

TT&C IFWG

[Redacted]

[Redacted]

Distribution:

- Cy 1 - D/OSP
- Cy 2 - ADD/OSP
- Cy 3 - D/PRS/OSP
- Cy 4 - EO/OSP
- Cy 5 - CS/OSP
- Cy 6 - C/PAD/OSP
- Cy 7 - C/SB/OSP
- Cy 8 - C/SS/OSP
- Cy 9 - RB/OSP
- Cy 10 - PRS/File
- Cy 11 - PRS/Chrono
- Cy 12 - [Redacted]
- Cy 13 - [Redacted]

BYE-108580-70

Page Five

~~SECRET~~

HANDLE VIA EYESMAN

~~SECRET~~~~CORONA HEXAGON GAMBIT IDEALIST~~

BYE-109023-70
Copy 10 of 14
27 November 1970

MEMORANDUM FOR: Director of Special Projects

SUBJECT : Photo Reconnaissance Systems Report No. 68

I. CORONAA. Accomplishments

1. QR-2 Mission 1112 "A" recovery expected to be accomplished on 27 November depending upon weather in the recovery area.

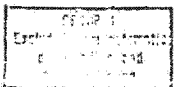
2. CR-8 SRV's were delivered on 25 November 1970.

B. Problems

CR-15 slope programmer failure analysis is continuing.

C. Projected Status

1. QR-2. Day 1 "B" mission.
2. CR-13. Pre-storage preps.
3. CR-14. Back-up storage.
4. CR-15. Pre-storage preps.
5. CR-16. Tracking.
6. CR-8. Receiving.

~~SECRET~~HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY~~CORONA HEXAGON GAMBIT IDEALIST~~

~~SECRET~~
~~CORONA HEXAGON GAMBIT REALIST~~

SUBJECT: Photo Reconnaissance Systems Report No. 68

D. Operations Mission 1112

After "A" to "B" transfer, the forward-looking camera ceased transporting film. Reason is unknown but suspect are (1) an instrument jam caused by mistracking film, and/or (2) broken film. Investigation is continuing. The aft-looking camera is showing normal operation. The DISIC camera also ceased transporting film after its "A" to "B" transfer. The cause is unknown.

II. HEXAGON

Model Status

1. Development Model (SDV-III)

It is expected that SDV-III will be removed from the A-1 Chamber on 30 November and be ready for installation in the A-2 Chamber on 2 December.

2. SV-1 (SN-003)

(A) Midsection

The midsection was turned over to LMSC on 22 November following completion of the looper modification. The LMSC effort was completed on 25 November at which time the supply was loaded into the vehicle. Final R&I tests will begin on 26 November. The supply was removed from the midsection in order to clear a film jam within the supply which occurred last week. New brake assemblies were installed in the supply.

BYE-109023-70

Page Two

~~SECRET~~
~~CORONA HEXAGON GAMBIT REALIST~~

~~SECRET~~
~~CORONA HEXAGON GAMBIT IDEALIST~~

SUBJECT: Photo Reconnaissance Systems Report No. 68

(B) Forward Section

Film stacking tests have been completed on all TUA's with satisfactory results. Wrap and cut tests are complete. Preparations are underway for implementation of the light leak test. Forward section will be turned over to SVIC on 27 November.

(C) Schedule

Assuming no further problems, expect mating of forward section to midsection to be completed on 6 December.

3. SV-2 (SN-002)

Special tests are continuing. A metering capstan test with an open 2A3 box is being run over the week end. PE is planning to start MFN 3.09 testing next week. The projected delivery date has now slipped to mid January.

4. SV-3 (SN-004)

TCA testing in the clean room prior to vibration testing will be completed on 30 November. TCA vibration is scheduled for 3 December but may possibly occur on 2 December 1970.

BYE-109023-70
Page Three

~~SECRET~~
~~CORONA HEXAGON GAMBIT IDEALIST~~

~~SECRET~~
~~CORONA HEXAGON GAMBIT DEALIST~~

SUBJECT: Photo Reconnaissance Systems Report No. 68

III. CONFIGURATION CHANGE BOARD

Major Configuration Change Board activities this week were as follows:

A. Planning and arrangements for the 15-17 December CCB meeting (Headquarters hosting) at Warrenton Training Center were finalized. Plans have been made to accommodate Mr. Brownman and Dr. Naka. The Executive Session starts at 0900 hours on 15 December; the meeting with the contractor starts at 0900 hours on 16 December and runs through 17 December. The agenda for the Executive Session includes presentations on:

1. The NPIC R&D Program for FY 71
2. The NPIC Color R&D Program
3. The HEXAGON Free Radical Camera Speed Film Development Program
4. The D&AD 3M Camera Speed Film Development Program
5. The Westover Evaluation of Non-Silver Duplicating Films and Their Impact on the Production System

Of the above, items 1 through 4 should be of interest to D/OSP.

B. The preliminary agenda for the CCB meeting was obtained telephonically. It is as follows:

BYE-109023-70
Page Four

~~SECRET~~

~~CORONA HEXAGON GAMBIT DEALIST~~

~~SECRET~~
~~CORONA HEXAGON GAMBIT IDEALIST~~

SUBJECT: Photo Reconnaissance Systems Report No. 68

1. Special presentations:
 - a. SO-242 Geology Study
(Mission 1108)
 - b. NPIC Mensuration Study
 - c. CCB History
2. Review of Government/Contractor
Action Items
3. PAR Status Reports
 - a. PAR 182S, Color Program Study
 - b. PAR 161B/R2, Optical Titling
Breadboard
 - c. PAR 172S, Duplication Study
(EK and NPIC presentations)
 - d. PAR 165B/R2, HEXAGON Pre-
Splice Complex
 - e. PAR 173B, Automatic Scene
Camera
 - f. PAR's 176B/R2, 177S/R1, 171S,
Review of Effects on Schedule as a Result
of Directed Stretchout
4. New Proposals
 - a. PAR 25-1-3S, Image Evalua-
tion by Means of Information Measure

~~SECRET~~
~~SECRET~~

BYE-109023-70
Page Five

~~CORONA HEXAGON GAMBIT IDEALIST~~

~~SECRET~~
~~CORONA HEXAGON GAMBIT IDEALIST~~

SUBJECT: Photo Reconnaissance Systems Report No. 68

b. PAR 23-1-11S, Parameters of Contact Printing Study

c. PAR 25-1-6S, Color Image Evaluation Methods. Preceded by complete review of PAR 25-0-6S which was a preliminary study on this area.

d. PAR 188S, Improvements in Mensuration Study

e. PAR 190S, Protection Treatment for Color Acquisition Films

f. PAR 185S, Interframe Color Control Lamphouse Study

Item 1. a. should be of interest to D/OSP. This is a presentation we are sponsoring which is the result of work done on the CORONA Program (Mission 1108) by Itek. The following items are also considered of interest to D/OSP: 1. c., 3. a., 3. b., 3. c., 3. d., and 4. a., 4. c. Further details can be obtained from R. Kohler.

C. A special U-2 (Red Dot) flight was arranged for the week of 30 November 1970 employing the Delta III configuration. The purpose of this flight is to flight test a new, very special film developed by EK.

D. Assistance was given to ORD in the processing of some extremely sensitive (security-wise) SO-242 color film.

BYE-109023-70

Page Six

~~SECRET~~
~~CORONA HEXAGON GAMBIT IDEALIST~~

Unclassified

~~SECRET~~

~~CORONA HEXAGON GAMBIT IDEALIST~~

SUBJECT: Photo Reconnaissance Systems Report No. 68

E. Coordinated on NPIC/DIA evaluation of an experimental duping film employed for the first time on Mission 4329. Tests are to also be run with this film on 1112. This film is a higher resolution duplication material.

IV. Meetings Requiring Participation of Headquarters Personnel

<u>Date</u>	<u>Subject</u>	<u>Attendees</u>
<u>PE</u>		
1 Dec	Follow-On Cost Audit	<input type="text"/>
2 Dec	Monthly Technical Review	Staff
3 Dec	Performance Factor Discussions	Patterson <input type="text"/>
3 Dec	Spares and Maintenance Meeting	<input type="text"/>
<u>RCA</u>		
3 Dec	P3-3 Buy-off	<input type="text"/>
<u>EK</u>		
1 Dec	Film/Core Pressure Meeting	<input type="text"/>
<u>HQ</u>		
1 Dec	SETS Program Review	Staff

~~SECRET~~

BYE-109023-70
Page Seven

~~CORONA HEXAGON GAMBIT IDEALIST~~

~~SECRET~~~~CORONA HEXAGON GAMBIT IDEALIST~~

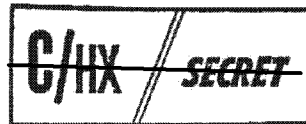
SUBJECT: Photo Reconnaissance Systems Report No. 68

DONALD W. PATTERSON
D/PRS/OSP

Distribution:

Cy 1 - D/OSP
Cy 2 - ADD/OSP
Cy 3 - D/PRS/OSP
Cy 4 - EO/OSP
Cy 5 - SA/IS/OSP
Cy 6 - CS/OSP
Cy 7 - C/PAD/OSP
Cy 8 - C/SB/OSP
Cy 9 - C/SS/OSP
Cy 10 - RB/OSP
Cy 11 - PRS/File
Cy 12 - PRS/Chrono
Cy 13 - NEPO
Cy 14 - WCPO

BYE-109023-70
Page Eight~~SECRET~~~~CORONA HEXAGON GAMBIT IDEALIST~~



OSP REGISTRY FILE COPY

BYE-109500-70
Copy 10 of 14
18 December 1970

MEMORANDUM FOR: Director of Special Projects

SUBJECT : Photo Reconnaissance Systems Report No. 71

I. CORONAA. Accomplishments

CR-2 (Mission 1112) analysis of No. 2 instrument and DISIC failure are continuing in preparation for the PET Meeting on 5 January 1971.

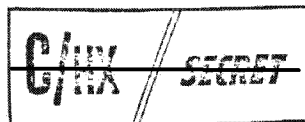
B. Problems

All motors, other than those installed in CR-13 and CR-15, involved in the slope programmer problem are being returned to the vendor for refurbishment.

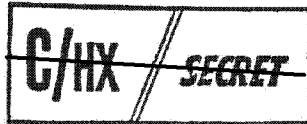
C. Projected Schedule

1. CR-13. Pre-storage - special tests being run to verify proper incorporation of all past systems mods.
2. CR-14. Storage R-25 status - special tests are also being run.
3. CR-15. Pre-storage.
4. CR-16. Environmental preps.
5. CR-8. Instrument acceptance.

GROUP 1
Excluded from automatic
downgrading and
declassification



HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY



SUBJECT: Photo Reconnaissance Systems Report No. 71

II. HEXAGON

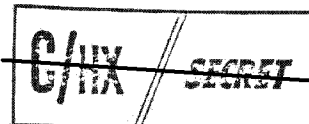
A. General

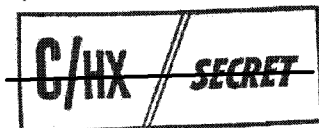
1. The effort to delete caging on the supply continues to show promise. Signature and qualification level tests (0.5 g's) were conducted on 17 December with no observable degradation of the film stack and with the first mode occurring at 23.5 cps. (A frequency below 20.0 cps would have caused a severe interface problem with LMSC.) Configuration checks of the film stack are being made and a design margin test (1.0 g) will be conducted in January.

2. A review of the data obtained on SN-002 during in-air testing was held at Perkin-Elmer on 15 December. The data presented at the meeting showed that the in-track smear requirements would not be met and that Camera "A" exhibits large focus variability. The review team pointed out that acceptance of the system with those deficiencies would require waivers but that the government would not direct that testing be terminated until the deficiencies were corrected. Subsequent to the meeting, PE elected to change Optical Bar "A" to improve system performance. During this OB change, the Project Office "suggested" that the platen from that OB be subjected to an assurance level random vibration test. This "suggestion" was predicated upon PE's test flow which had not required a retest of the platen after the last partial disassembly and rebuild (with new fine tension rollers and slit and shutter assembly). The platen was vibration tested on 17 December.

BYE-109500-70

Page Two





SUBJECT: Photo Reconnaissance Systems Report No. 71

3. An Operations IFWG meeting was held on 10 December in Building 156. The problem of RTS tapes was discussed and procedure agreed upon, but the question of PE having priority for support of the "HOPE" report was not settled. SP-7 is working on a briefing to be given to Col. Buzard/General King. For details please refer to SPO TWX 5712 (being transmitted).

4. The TRW message on solo phase (post-RV-4 recovery) flight test has been reviewed. Most of the points covered by the message have been incorporated in the test plan submitted.

5. Rehearsal Number Two started at 1000 PST 15 December 1970. A number of problems have appeared, with most of them being minor with the exception of one recovery-predict software problem. This problem is being worked and should be corrected by the end of the rehearsal; however, only one recovery will be made (two were planned).

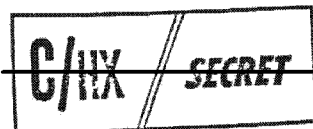
B. Model Status

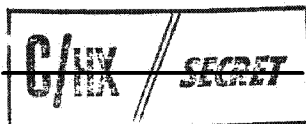
1. Development Model (SDV-III)

a. The vehicle has been removed from the A-2 chamber, and one of the two identical sequences on the film was processed locally and is being evaluated at WCFO. The film containing the other set of sequences was shipped to Rochester for processing and subsequent evaluation at Westover.

b. A small heat leak was discovered in RV-2, and McDonnell Douglas is conducting a test to attempt to isolate the problem. PE will then begin the supply reload when the heat test is finished.

BYE-109500-70
Page Three





SUBJECT: Photo Reconnaissance Systems Report No. 71

2. SV-1 (SN-003)

No PE effort was expended on SV-1 due to LMSC operations. PE operations should resume no later than today. PE/WCFO will fix SSC II recessed pin on 21 or 22 December.

3. SV-2 (SN-002)

a. Midsection

PE has decided to replace Optical Bar "A" to correct a focus variability of that bar. The new bar will come from SN-005. The FEV redesign is now being incorporated into SN-002. System test will restart on 22 December at the earliest. Acceptance tests are scheduled to restart on 28 December. MFN 3.09 (Ready Room "A") tests will be completely rerun. Chamber in-air tests are scheduled to start on 2 January. The system is projected to be ready for shipment in early February.

b. Forward Section

Correction of anomalies observed during the cable checkout is in process. Test procedure documents for the assembly and test of SV-2 forward section are being revised and updated.

4. SV-3 (SN-004)

The two-camera assembly (TCA) was installed in the midsection (MSA) on 17 December. TCA alignment

BYE-109500-70
Page Four





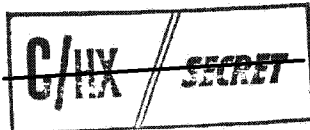
SUBJECT: Photo Reconnaissance Systems Report No. 71

and installation of cables within the MSA was started 18 December. It is expected that the supply will be installed in time for the MFN 3.05 (Manufacturing & QC Verification) tests to begin 28 December. The system is approximately four days ahead of schedule to a 15 April ship date.

III. CONFIGURATION CHANGE BOARD

1. The CCB visited TOPOCOM and NRT5C on 14 December 1970 for briefings on the function, activities and programs of these facilities.
2. The Quarterly CCB Meeting was held at WTC on 15-17 December 1970. A detailed summary of the meeting will be submitted as a separate memorandum. However, six (6) new PAR's (tasks) were presented by the contractor. These requests totaled \$596,000. Of the six presented for approval, three were approved totaling \$340,000; two were deferred and one was disapproved. The actions were as follows:
 - a. PAR 25-1-6S, Color Image Evaluation Methods; ROM \$85,000 Approved.
 - b. PAR 188S, Improvements in Small Image Mensuration; ROM \$95,000 Approved.
 - c. PAR 190S, Protective Coating for Color Acquisition Films, Phase I; ROM \$36,000 Deferred.
 - d. PAR 185B/R1, Interframe Color Control Printer, Phase I; ROM \$150,000 Deferred.

BYE-109500-70
Page Five



Unclassified



SUBJECT: Photo Reconnaissance Systems Report No. 71

e. PAR 25-1-3S, Image Evaluation by Means of Information Measure; ROM \$70,000 Disapproved.

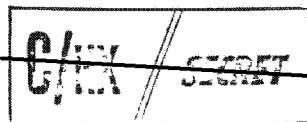
f. PAR 23-1-11S, Contact Printing Parameters; ROM \$160,000 Approved.

IV. Meetings Requiring Participation of Headquarters Personnel

<u>Date</u>	<u>Subject</u>	<u>Attendees</u>
<u>Westover</u>		
22 Dec	SDV-3 Chamber A-2 Test Data	<input type="text"/>
<u>HQ</u>		
22 Dec	Follow-on Work Statements	<input type="text"/>
22 Dec	PSO Spares	<input type="text"/>

AD/PRS/OSP

- Distribution:
- Cy 1 - D/OSP
 - Cy 2 - ADD/OSP
 - Cy 3 - D/PRS/OSP
 - Cy 4 - EO/OSP
 - Cy 5 - SA/IS/OSP
 - Cy 6 - CS/OSP
 - Cy 7 - C/PAD/OSP
 - Cy 8 - C/SB/OSP
 - Cy 9 - C/SS/OSP
 - Cy 10 - RB/OSP
 - Cy 11 - PRS/File
 - Cy 12 - PRS/Chrono
 - Cy 13 - NEPO
 - Cy 14 - WCPO



BYE-109500-70
Page Six