C/HX // SECRET

BYE-107590-70
Copy 10 of 14
19 June 1970

MEMORANDUM FOR: Director of Special Projects

SUBJECT : Photo Reconnaissance Systems Report No. 45

## I. CORONA

### A. Accomplishments

1. The Mission 1110 PET Meeting was concluded with the writing of the Peir Report.

2. Dr. "A" and block test were completed on CR-12 after deshimming.

3. CR-13 completed its testing and was deshimmed.

4. Thru-focus and resolution tests on QR-2 were completed.

5. Level-of-effort negotiations for FY 1971 with LMSC and Itek (Palo Alto) were completed.

### B. Problems

Ripple filters were found to be mismarked after calibration. All stock and system-installed filters are being retested to determine proper marking.

### C. Projected Status

1. CR-12. Flight preps, instrument cleaning, and capsule recycle.

2. CR-13. Storage preps.

C/HX // SECRET

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

C/HX // SECRET

SUBJECT: Photo Reconnaissance Systems Report No. 45

3. QR-2. Block test - "A" SRV weight and balance completed.

4. CR-14. Block preps.

II. HEXAGON

1. The Sensor Subsystem test program is being revised to conform with Appendix F and G of Revision D to the performance specification and with the midsection CEI specification. The acceptance plan described by these two documents is essentially the same as that described by the previously used HEX-2571-67 Acceptance Test Procedure. Appendix F of the Revision D performance specification is now the sole source for planned qualification testing.

2. The SETS review of the P-1 FACI data package is continuing. Many of the problems associated with malfunction data correlation (Weekly Report - 5 June) have been resolved through direct discussions with appropriate SSC QA personnel. The documentation deficiencies are to be corrected for formal FACI. Legible malfunction reports will be available at FACI, but the problem of legible copies remains because of the type paper from which the reports are copied as well as the handling and reproduction procedures. SSC is trying to improve the situation.

3. SSC is expediting copies of the P-1 electronic package test procedures to SETS for review and comparison with the D Model annotated procedures. The SSC (13A1) and PDS (14A1) boxes are believed to have the most significant differences.

4. Film deliveries during the week:

2 - 105,500 ft. rolls - Type 1414
3 - 26,000 ft. rolls - Type 1414
2 - 10,000 ft. rolls - Type 1414 for RCA

5. AC is still in the process of preparing cost and delivery data for P.E. on the SSTC spares. A response was expected this week but it has slipped at least one week.



C/HX // SECRET

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

C/HX // SECRET

SUBJECT: Photo Reconnaissance Systems Report No. 45

6. Personnel from [redacted] visited Bldg. 156 this week for familiarization with the assembly and test activity. Particular emphasis was placed on the pieces of test equipment which support the A&T flow.

7. The installation and testing of the originally ordered 2701 equipped with synchronous data adapter and a parallel data adapter has been completed at the West Coast computer facility. Acceptance test schedules for the parallel data communications interface unit have been made for next week with P.E. Aerospace representatives. Version 18.6 of the 360 operating system was reviewed by [redacted] at Hqs.

8. Representatives from SETS spent two days of MACFACT testing and program checkout using SSTC-generated data at the West Coast facility. Further testing will be required for P-1 Model data.

B. Development Model (SDV-III)

Forward Section - Investigation indicates that the payload mistracking problem reported last week most likely resulted from a loss of tension in the film path during preparations for the light leak test. The film path has been reconstructed and proper tracking has been restored. The forward section is ready for mating.

Midsection - The midsection was turned over to SVIC on 17 June. The engineering buy-off was completed on 18 June, and midsection commenced mating to the aft section that same day. The midsection will be mated without the fine film path properly functioning on the "A" side. The OB "A" encoder is scheduled to be replaced prior to acoustic testing.

C. Flight Article #1

The in-air test results showed unacceptable platen performance on both sides. The in-flight smear, as measured from the "C" targets, is unacceptably high. The midsection has been removed from the chamber for trouble shooting. The metering capstan on Camera "B" has a peak error of about .2 inches per second.



C/HX // SECRET

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

C/HX // SECRET

SUBJECT: Photo Reconnaissance Systems Report No. 45

D. Flight Article No. 2

Retrofit activity - primarily the platen area - has consumed this week. The first of the retrofitted platens was reinstalled on 18 June (P.M.) and consisted of the new slit and shutter assemblies, an improved locking cam, and some new light pipes. The supply has been through vibration and acoustic tests. It is now in final post-vibration test and then will be loaded with the large film rolls. It is expected to be loaded into the midsection on 23 June. The P-2 sequencer (13A1) has an integrated circuit (7407) whose lot failed the Group C SCD testing and which, in the Project Office's opinion, has a high probability of failure during testing. P.E. recognizes this and is generating a retrofit plan to use another sequencer in P-2. This should be done prior to P-2's Ready Room "A" tests, which will hopefully commence during the week of 29 June. It must be done in time for the pre-Chamber "A" baseline tests, which are currently scheduled for mid-July.

III. Meetings Requiring Participation of Headquarters Personnel

| Date | Subject | Attendees |
|---|---|---|
| P.E. | | |
| 23 June | Design Improvement Studies | |
| 24-25 June | P-1 TCA FACI Review | |
| 25-26 June | Critical Test Point EMC Qual | |
| LMSC | | |
| 25 June | MACFACT Discussions | Burks |



C/HX // SECRET

HANDLE VIA BYEMAN CONTROL SYSTEM ONLY

C/HX SECRET

SUBJECT: Photo Reconnaissance Systems Report No. 45

| Date | Subject | Attendees |
|---|---|---|
| **RCA** | | |
| 25 June | Take-Up Acceptance Tests | [redacted] |
| **EK** | | |
| 25-26 June | Core Pressure Test | [redacted] |
| **HQS.** | | |
| 24 June | GE CORONA LOE Negotiations | [redacted] D&AD Representatives |
| 24 June | GE Capabilities Briefing | |
| 25 June | Itek CORONA Analysis LOE Negotiations | [redacted] Kohler, [redacted] |
| **Annual Leave** | | |
| 25-28 June | | [redacted] |
| 22-26 June | | D. Patterson |
| 26 June | | [redacted] |

[redacted]
PMO/PRS/OSP



C/HX SECRET

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~C/TKX~~ // ~~SECRET~~

**SUBJECT: Photo Reconnaissance Systems Report No. 45**

**Distribution:**
**Cy 1 - D/OSP**
**Cy 2 - DD/OSP**
**Cy 3 - D/PRS/OSP**
**Cy 4 - EO/OSP**
**Cy 5 - C/D&AD/OSP**
**Cy 6 - CB/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 -**
**Cy 14 -**



~~C/TKX~~ // ~~SECRET~~

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

[redacted]

C/TCH // SECRET

14 000408790

[redacted]

BYE-107696-70
Copy 1 of 14
26 June 1970

MEMORANDUM FOR: Director of Special Projects

SUBJECT : Photo Reconnaissance Systems Report No. 46

## I. CORONA

### A. Accomplishments

1. Negotiations with G.E. and Itek were completed.

2. CR-14 post-HIVOS review accomplished.

3. QR-2 resolution block test completed.

4. CR-12 flight preparation inttiated for 22 July launch of Mission 1111.

5. Building 152 is approximately 80% complete and movement of people and hardware will commence during July. Additional people will be moved to Bldg. 156 within the next several weeks.

### B. Problems

Ripple filters are still being tested.

### C. Future Activities

[redacted] will be on annual leave the week of 29 June 1970.

### D. Projected Status

1. CR-12. Flight preps.

2. CR-12. Storage preps.

GROUP 1
Excluded from automatic downgrading and declassification

C/TCH // SECRET

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~C/HX SECRET~~

SUBJECT: Photo Reconnaissance Systems Report No. 46

3. QR-2. Storage preps.

4. CR-14. Block preps.

5. CR-15. Storage.

II. HEXAGON

A. General

1. SDV-III mating (forward to midsection) was completed on 21 June. The interface check using the SSES/ADPACS/Aft Section was successfully completed on 24 June, a day late due to ADPACS being down. The payload creep which will be followed by the SS vertical baseline is scheduled to begin on 29 June.

2. Preparations for the buildup of the P-1 forward section are underway.

3. Drs. McLucas, Naka, and Steininger toured Bldg. 156 on 25 June 1970.

4. [redacted] of NPIC visited the WCPO on 25 and 26 June. Discussions were held with SVIC, SETS and WCPO personnel regarding resolution capability of the HEXAGON Attitude Control System. [redacted] plans to discuss the NPIC requirements with the SPO next week. These discussions are intended to lead to an analysis by SVIC of the best method for reduction of attitude data to be used by WCPO in support of NPIC.

5. The status of the Design Improvement Studies was reviewed at P.E. on 23 June with the following highlights:



~~C/HX SECRET~~

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

C/TIX // SECRET

SUBJECT: Photo Reconnaissance Systems Report No. 46

a) Emergency Shut Down - P.E. had studied the problem of turning off system power at the completion of the emergency shut down and recommended that the power not be turned off until the normal time that the sequencer would do so. There was concern on the part of SETS and the Project Office that this would result in overstressing and overheating of the capstan BME. P.E. was requested to provide further information on this point at the next review.

At the last review P.E. had been requested to study the possibility of having a mono ESD capability (shut down of only that side of the system which had a failure). Their conclusion was that this would require major hardware changes to components used in the normal operation of the system. This would decrease the operational reliability of the system and is undesirable. Another alternative is based upon stereo ESD but provides the capability for subsequent mono operation in the same pass. Again, the result was that extensive hardware changes (i.e., the inhibit circuitry) would be required. P.E. is not to pursue the mono ESD studies any further.

b) Because of envelope constraints, P.E. has reduced the size of the "Super Looper" from 400 to 250 foot capacity. This will satisfy the requirements for eliminating rewinding of the system and will also provide the capability for changing scan modes during an operation. P.E. indicated that they are putting most of their effort into a mechanical looper rather than a slack box as they felt that their knowledge of the slack box problems was much less and would probably entail a greater lead time for incorporation into the system. P.E. was requested to maintain the present level of activity on the slack box design for the remainder of this phase of the Design Improvement Studies. This will provide the Project Office with the information necessary to decide which, if any, design will be incorporated into the system. On this point, a meeting was held at EK on 25 June to review the operating parameters and problemmareas encountered by EK in their earlier slack box experiments.



C/TIX // SECRET

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

SUBJECT: Photo Reconnaissance Systems Report No. 46

c) P.E. recommended that a direct measurement technique be used for the new supply radius sensor device. An undesirable feature of this device is that it will only be capable of being caged for ascent with a full or nearly full supply. This would not allow a system to be launched with a partial (85,000 ft. or less) load of film. The alternative is to incorporate a more complex, heavier caging mechanism. P.E. is proceeding with the limited caging radius design.

d) The present phase on the brush type motor has been completed. The results show that the hybrid design is feasible. However, a potential interference problem exists on the Platen and Metering Capstan designs. A more detailed design analysis will be required in the next phase of this study. The results of the brush material studies, although they were promising, are invalidated because a material analysis showed that niobium was not present. These tests will be redone in a later phase of this study with the correct materials. It is anticipated that the results will be better, as niobium is known to increase the wear characteristics of the brushes being considered.

e) The fixture for the vibration test of an uncaged supply is being manufactured. The tests are now scheduled to be conducted the week of 6 July.

f) The engineering model for the in-flight changeable filter is 95% complete. This model will be used for qualification testing upon completion. The results of a qualification test using a welded housing versus a casting as the flight hardware was questioned. P.E. stated that they will do an additional vibration test on the filter assembly to cover this question. The film change detector approach has again changed since the last reporting period. The concept now employs a film leader consisting of two sections of film -- one opaque and one transparent -- to the IR spectrum. The logic circuit has been modified from the original concept to correct the problem resulting from black-and-white film and color film having different transmissibility characteristics.





HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

**SUBJECT: Photo Reconnaissance Systems Report No. 46**

6. P.E. has compiled a new list of design changes for simplification of the mechanical aspects of the system. This will be reviewed at P.E. the week of 29 June.

7. A briefing was given by Mr. Ordway Gates of G.E. at Headquarters on the capabilities of the General Electric Company to expand from an RV contractor to a systems capability. (Messrs. [redacted] and [redacted] were also present.) The briefing was oriented from a technical viewpoint with no information on cost or schedule control or overall management capabilities.

8. P.E. has engaged in several parallel studies to determine the cause of the degraded performance of P-1 in Chamber "A". The apparent fixed offset, which generates in-track smear, has not yet been explained. The cause of the variable offset, which again contributes to in-track smear, has apparently been located. Tests, with a rotating optical bar in the balancing stand, have shown that motion exists in the folding flat of the correct magnitude to explain the problem. Further tests of a flat on its mount are being defined to identify the necessary design changes.

9. SBAC has shown concern that the shipment of the SV from Sunnyvale to Vandenberg AFB could expose the camera to an adverse pressure gradient greater than the 0.12 psi agreed to in the ICD. There is no structural problem, as the system has two exceedingly large bleed valves (the OB seals), but a cleanliness question does exist. P.E. is defining a test to evaluate this problem.

B. Flight Unit No. 1

Testing of P-1 in Chamber "A" is in process. Tests 7, 8, 9, and 10 of Attachment I to the CEI Spec have been completed and formal acceptance testing will commence on 27 June. The system has a fixed in-track smear component which has not been explained but was compensated for by electrical biasing of the platen. Failure to correct this prior to flight will require that a Kluge box be flown. A variable in-track smear (discussed in the general section of the report) also exists which has not been





HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

SUBJECT: Photo Reconnaissance Systems Report No. 46

corrected, but has been averaged. The metering capstan on OB B has a smear component of 6 to 7 times specification. When a better capstan is available, it will be retrofitted into the system and, at the minimum, in-air photographic performance will be evaluated.

C. Flight Unit No. 2

1. TCA retrofitting has been completed. The supply has been loaded with the Chamber "A" test film and is in the midsection.

2. A special series of tests is being conducted on 26 and 27 June at the TCA level to determine the extent of smear, if any. Early results are expected 29 June. Smear has been exhibited in boththe Development Model and P-1.

3. P-2 is in Ready Room B. Both platens have been modified and installed. The P-3 sequencer has been installed in P-2. Type 1414 film is being used. Verification of the platen modification is underway.

III. Meetings Requiring Participation of Headquarters Personnel

| Date | Subject | Attendees |
|---|---|---|
| P.E. | | |
| 30 Jun - 1 Jul | FACI Review | |
| 30 Jun | Focus Target Discussions | |
| 1 July | Color Processing Installation Meeting | |
| 7-8 July | TCA FACI Meeting | Kohler, Burks |
| ~~14~~ 9 July | Technical Advisory Board Pre-Meeting | Patterson |

~~C/HX SECRET~~

SUBJECT: Photo Reconnaissance Systems Report No. 46

| Date | Subject | Attendees |
|---|---|---|
| **RCA** | | |
| 29 June | TU 2, 3, & 4 Buy-Off | |
| **Westover AFB** | | |
| 1 July | Focus Target Data Reduction Meeting | |

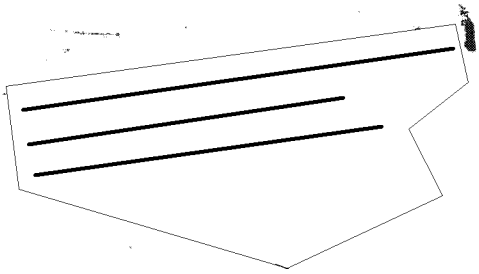
AD/PRS/OSP

Distribution:
Cy 1 - D/OSP
Cy 2 - DD/OSP
Cy 3 - D/PRS/OSP
Cy 4 - EO/OSP
Cy 5 - C/D&AD/OSP
Cy 6 - CB/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
Cy 14



~~C/HX SECRET~~

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY



C/HX // SECRET

BYE-107031-70
Copy 10 of 14
1 May 1970

MEMORANDUM FOR: Director of Special Projects

SUBJECT : Photo Reconnaissance Systems Report No. 38

## I. CORONA

### A. Accomplishments

1. DD/S&T Training Class was given a complete briefing and facilities tour on 27 April.

2. Move preparations are proceeding. Mod 65 computer installation at Building 156 is complete with CORONA operational software checkout completed satisfactorily. Vibration room hoist is to be moved this week. The Mod 50 computer at A/P was returned to IBM on 1 May.

3. CR-11 orbit determination and flight requirements have been completed.

4. The QR-2 DISIC (# 14) discussed in last weeks' report has been replaced by #13 as noted.

5. CR-11 for mission 1110 will be shipped to VAFB one day early to participate in an exercise to prove capability of receiving checkout for earlier mate on future missions.

### B. Problems

1. CR-11 emissivity tests indicate a requirement for removal and replacement of thermal tape prior to launch on 20 May. Rework will be accomplished this week.

2. DISIC #14 is to be returned to F.C.I.C. for replacement of the front lens element and refurbishment.



C/HX // SECRET

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

C/HX // SECRET

SUBJECT: Photo Reconnaissance Systems Report No. 38

C. Projected Status

1. CR-11. Flight preps and retape.

2. CR-12. Storage and back up.

3. CR-13. ReHIVOS preps and roller change.

4. QR-2. Vibration and HIVOS.

5. CR-14. Environmental preps.

6. CR-15. Functional assembly.

II. HEXAGON

A. General

1. DD/S&T Training Class was given a briefing on overall HEXAGON Program by Col. Heran and a tour of Building 156 by the WCPO staff.

2. The FACI of the take-up was held at P.E. on 29 April. A basic disagreement was immediately evident. P.E. presented the baseline test as the only acceptance test, while the Project Office felt that the vibration, thermal, alignment, and EMI as well as the baseline test were acceptance tests. The CEI spec presented was considered inadequate, especially in view of a comprehensive CEI spec between P.E. and RCA. None of the configurative baseline data was available prior to the presentation; however, a subsequent review by SETS was very satisfactory. The documentation was considered to be in excellent shape. The Project Office has directed P.E. to consider the environmental tests as acceptance tests and also plans to use the RCA version of the CEI spec as the official take-up CEI spec. With the incorporation of these changes to the take-up FACI and a better definition of qual status and plans, it will be acceptable to the Government.



HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

C/HX // SECRET

SUBJECT: Photo Reconnaissance Systems Report No. 38

3. The Spares Meeting which was held on the West Coast this week concluded with the selection and vendor identification of electrical and mechanical spare parts for the 4 RV Test Station and mechanical parts for the take-up simulator and the supply test station. Perkin-Elmer now will provide an ROM cost figure and submit this to the Project Office. P.E. has been asked to send a copy of the package to the depot as soon as it becomes available.

4. A supply core was sent to SETS this week for their experimentation on core pressure measurement techniques.

5. P.E. will receive the following next week from Kodak:

| | | |
|---|---|---|
| Danbury | o | Basic load of MX-819 chemistry |
| | o | 30,000 ft. 1414 film for processing tests |
| | o | Two 26,000 ft. 1414 photo quality |
| West Coast | o | (for shipment over the weekend) Two 26,000 ft. LS SO-380 |

6. The reason for the Development Model IMC problem appears to have been identified. P-1 data analysis shows that a similar problem exists and that the cause is the mod computer. Corrective action has not yet been identified; however, there are a number of available alternatives.

7. P.E. was directed to terminate the studies of a pauseless recycle profile as part of the improved sequencer effort. This action was taken as the result of a preliminary P.E. analysis, which SETS concurs in, that there is essentially no improvement to system reliability with the pauseless profile, and other studies (super looper, etc.) would be adversely affected.

8. The Project Office attempts to conduct a parallel assessment of the P-1 Model continue to have problems. For instance, when data tapes of the pre- and post-vibration functional tests were received, they were found to have had a format change which is incompatible with the Agency programs. The programs are now being



C/HX // SECRET

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

modified to accept the change. Perkin-Elmer representatives will meet with Project Office personnel at Headquarters on 6-8 May to further define the Government's data requirements and need dates for this data in order to effectively conduct a parallel effort.

B. Development Model

1. All RV's have been installed in the forward section structure and film tracking tests have been completed on three take-up units. Tracking verification on take-up no. 1 began on 30 April.

2. The midsection was released to SBAC for installation of their components (cables, boxes, insulation, etc.), and this work is now in progress. The defective master mux unit, returned again to Spacecraft for repairs, is expected to be available on 2 May. The MS is planned to be returned to SSC/WCFO on 1 May for completion of R&I which is expected to take 13 working days. Availability of the MS for mating to the aft section is 16 May.

C. Flight Model No. 1

Baseline testing (MFN 3.09) has been completed. EMC testing (critical test points) is being conducted and should be completed 1 May. Midsection vibrations should start early next week. There are a number of EMC anomalies which will have to be cleared up shortly. A few days will probably be lost in the schedule in clearing these anomalies.

D. Flight Model No. 2

Coarse film path checkout has continued during the week and has been plagued by day-to-day-type failures, i.e. broken rollers in the simulators, switch failures, etc. P.E. is now claiming for political reasons a 14 September 1970 ship date for P-2 vs an original 14 August 1970 date, based on late midsection delivery and release to P.E. The Project Office does not concur in this rationale.



HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

C/HX // SECRET

SUBJECT: Photo Reconnaissance Systems Report No. 38

III. Meetings Requiring Participation of Headquarters Personnel

| Date | Subject | Attendees |
|---|---|---|
| **LMSC** | | |
| 5 May | HTC (TRW) Interface Document Review | |
| **HTC** | | |
| 7 May | Command Sequencer Sub-Group | |
| **P.E.** | | |
| 5 May | Witness Vibration Testing of P-1 Midsection | |
| **Hqs.** | | |
| 5 May | Pre-planning P-1 FACI and Acceptance Requirements | Staff |
| 6-7 May | P-1 FACI and Acceptance Requirements | Staff |
| **NPIC** | | |
| 7 May | PFA Facilities Planning Meeting | |

PMO/PRS/OSP



C/HX // SECRET

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

C/TKH // SECRET

SUBJECT: Photo Reconnaissance Systems Report No. 38

Distribution:
Cy 1 - D/OSP
Cy 2 - DD/OSP
Cy 3 - D/PRS/OSP
Cy 4 - EO/OSP
Cy 5 - C/D&AD/OSP
Cy 6 - CB/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 -
Cy 14 -



C/TKH // SECRET

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

BYE-107365-70
Copy 10 of 14
28 May 1970

MEMORANDUM FOR: Director of Special Projects

SUBJECT : Photo Reconnaissance Systems Report No. 42

I. CORONA

A. Accomplishments

1. As of R plus 7 day, Mission 1110 is operating satisfactorily. The first bucket is approximately 71% complete.

2. The CR-13 post-HIVOS critique has been completed. Data evaluation resulted in the acceptance of the test. The instrument failsafe reported last week apparently was caused by the initiation of another operate prior to the preceding operation 20 second relay opening. The procedure has been changed to prevent recurrence.

3. The QR-2 post-HIVOS critique was also completed. All data are acceptable. The problem reported last week has been traced to a scan head potentiometer. Replacement has been completed, and the necessary retest is in progress.

4. Software support of CORONA Mission 1110 is being successfully accomplished in Building 156.

B. Problems

None.

C. Projected Status

1. CR-12. Post-storage.

2. CR-13. Block preps.





HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

SUBJECT: Photo Reconnaissance Systems Report No. 42

3. QR-2. Block preps.

4. CR-14. HIVOS.

5. CR-15. Temporary storage.

II. HEXAGON

A. General

1. The revised sync flash calibration program (SYNCER) was transmitted from the WCPO to Westover, P.E. and Headquarters along with sample output report data. This program will be used with P-1 test data.

2. P.E. presented some of the results of the P-1 EMC qual tests (critical test points) at the Monthly Technical Review. Of the eleven points evaluated, ten appear to have passed the test. On the other point (IMC input to the metering capstan), there appears to be no safety margin. Six db safety margin is the requirement. P.E. is checking the data to verify the results. Five additional test points were measured (for a total of 16), but conducted susceptibility data at the box level has not yet been measured for these.

3. P.E. has decided to fix the optical bar creep problem. P-1 tests have not shown a phasing problem; however, the Development Model and P-2 optical bars have been out of phase as a result of the bars creeping. The fix is planned for all flight models.

4. Eastman Kodak's facility conversion to the low RH environmental conditions is on schedule. Spooling operations are expected to commence next week (3 or 4 June). Note that while the spooling equipment will be back in operation, there are still other areas still requiring conversion. This will not impact film deliveries currently scheduled. The schedule for low RH film production is mid-August.





HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

SUBJECT: Photo Reconnaissance Systems Report No. 42

5. An initial load (80 gals. each) of MX-641, MX-819, and Modified B chemistry is being sent to the West Coast to allow P.E. to commence film processing tests which the Project Office urged them to begin in March. P.E. now claims that performing these tests will delay P-2 by 19 days. The Project Office does not concur with this at all.

6. A Design Improvements Status Review was held at P.E. on 26 May. The significant points of this meeting were:

a. Emergency Shutdown

P.E. was directed at the meeting to consider as part of the study the emergency shutdown of a single camera. The approach P.E. was taking was to have the entire system shut down until the next tracking station contact even if only one camera had a failure. P.E. had also simplified their study approach by shifting into the start/stop mode so that servo phase down was much easier.

b. Brush Motors

P.E. has, through necessity, changed the approach they were taking on the brush motor studies. Because of inertia limitations on the smaller motors, they are unable to use a motor with a rotating armature. The major gains (part count reduction) can still be realized by using the present motors, while the electronics switching would be accomplished through a slip-ring commutator arrangement rather than via the present brushless motor electronics. The result will be an inside-out motor that does not need to be requalified except for the slip-ring components. The brush material studies completed to date are promising in that low wear rates and contact resistances are being experienced.





HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

SUBJECT: Photo Reconnaissance Systems Report No. 42

c. Super Looper

The presentation on the super looper studies was somewhat disconcerting. P.E. stated that they agreed with the SETS analysis which shows that the increased flexibility of the system will yield only a small (2.6%) increase in film efficiency. P.E. also stated that they had no information on the system benefits of the side effects of the super looper (elimination of pressurization, simplification of take-up builder roller operation, possible elimination of active thermal control) as they did not feel that these gains were worthwhile. (It is true that other effects would have to be studied, i.e., corona, film curl, etc.) P.E. was instructed to quantify the benefits of the above changes in terms of reliability and cost and to identify the extent of testing necessary to evaluate film curl and corona.

d. In-Flight Changeable Filter

Progress is being made toward implementing the in-flight filter design on Flight Model #7. P.E. (OTD) is designing and will manufacture the support electronic boxes.

C. Development Model (SDV-3)

1. Forward Section - The twist test was completed on 23 May. A single incident of payload misstacking occurred on side "A" during the passage of a "bowed" portion of film. As no other anomalies were noted, it is concluded that structure deformation, at least to the extent of that present during this test, will not significantly degrade payload tracking. The forward section is presently undergoing a pneumatic leak rate check, and preparations are underway for a light leak test to be conducted on 28 May.

2. Mid-Section - The supply reloading into the midsection took longer than expected, due to a leaking boot at one of the attachment fixtures. After the supply was reinstalled, an attempt was made to

SUBJECT: Photo Reconnaissance Systems Report No. 42

run the R&I test procedure. After several sequences, however, the "A" side platen was heard to hit the stops, and the camera was shut down. Subsequent trouble shooting has failed to reveal the cause of the problem. If the platen were repaired by the morning of 28 May, the earliest realistic mate date is 2 June, including working the holiday weekend.

D. Flight Article #1

The Platen "A" servo problem during recycle has reoccurred. It appears that some of the motor windings are not being energised. The exact cause of the problem has not yet been determined. The midsection will not start into Chamber "A" until the above problem has been resolved.

E. Flight Article #2

Following the incorporation of the previously reported ECO's, cables, etc., P-2 is expected to run the TCA for record on 29 May. Both the "A" side and "B" side have been satisfactorily operated independently.

III. Meetings Requiring the Participation of Headquarters Personnel

| Date | Subject | Attendees |
|---|---|---|
| P.E. | | |
| 4-5 June | Operations Discussions with Gen. King and Col. Buzard | Patterson |
| RCA | | |
| Week of 1 June | P2-1 Acceptance Tests | |

C/HX // SECRET

SUBJECT: Photo Reconnaissance Systems Report No. 42

| Date | Subject | Attendees |
|---|---|---|
| **SETS** | | |
| 2 June | SSTC CEI Spec Review | [redacted] |
| 3 June | Modify Test Program per Revision D of the Performance Specification | |
| **WCPO** | | |
| 4 June | Develop Response to SSTC CEI Specification | [redacted] |
| **HQS** | | |
| 2-3 June | CCR Negotiations | Patterson, [redacted] and Staff |
| 2 June | RadInc Presentation | Staff |
| 3 June | (PM) P-1 Risk areas | Patterson, [redacted] Kohler, [redacted] |

[redacted]

PMO/PRS/OSP

Distribution:
Cy 1 - D/OSP
Cy 2 - DD/OSP
Cy 3 - D/PRS/OSP
Cy 4 - EO/OSP
Cy 5 - C/D&AD/OSP
Cy 6 - CB/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 - [redacted]
Cy 14 -



C/HX // SECRET

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY