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21 May 1970**MEMORANDUM FOR: Director of Special Projects****SUBJECT : Photo Reconnaissance Systems Report No. 41****I. CORONA****A. Accomplishments**

1. Mission 1110, CR-11, was launched 20 May 1970. About 30% of the first bucket has been consumed. All systems are operating satisfactorily.

2. Mission 1110 R-7 and R-1 meetings were conducted at VAFB on 14 and 19 May respectively.

3. CR-13 re-HIVOS test was completed. Data results are being evaluated. During HIVOS, CR-13 instrument #2 failed. The problem is under investigation.

4. QR-2 HIVOS test completed. Data and film evaluation are currently in progress. During HIVOS, QR-2 #1 instrument slit width mechanism continued to rotate during several operates. The problem is being investigated.

5. NPIC and TOPOCOM personnel were provided "C" and "H" briefings and tours.

6. CR-14 tape recorders were delivered on 15 May.

B. Projected Status

1. CR-11. Operational.
2. CR-12. Post-storage.
3. CR-13. Post-HIVOS.

GROUP 1
Excluded from automatic
downgrading and
declassification

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4. QR-2. Problem investigation and block preps.
5. CR-14. Light leak test preps.
6. CR-15. Temporary storage.

II. HEXAGON

1. The statistics on the seven large (105,500 ft.) film stacks delivered to date by EK show that the full capability of the supply is not being utilized. The present method of specifying spool size (film length) was arrived at from a consideration of EK quoted film tolerances. Since these tolerances have not been realized, the spool size will be specified by diameter. This will increase the payload capacity by approximately 5%. It will now be possible for EK to exceed the weight limit of 890 pounds with this approach, but since each film stack is weighed after spooling, any excess can be removed during the final horizontal baseline at SBAC prior to transportation to VAFB.

2. P.E. was authorized to initiate the study effort to eliminate caging from the Supply. As part of this study, the core is to be redesigned to accommodate a higher film pressure. The latter change was necessary because of EK's ultraconservative prediction of variations in pressure due to spooling techniques.

3. A long lived forward section alignment problem was finally resolved at the S&M IFWG through concessions by McDonnell and P.E. in that the manufacturing tolerances could be tightened and the alignment requirements could be relaxed. Since there is no on-orbit check of alignment, it was recommended to the A&T IFWG that an SBA deflection/film transport test be incorporated as an assurance test on each flight vehicle until a comfortable level of confidence is established.

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4. The PI-4 take-up has passed a proto-qual vibration test. This is vibration to qualification levels for 30 seconds instead of three minutes, to reduce the time on a flight unit. The take-ups do not appear to have any remaining major problems and on the last buy-off there were no waivers.

5. The Project Office, SETS, and SSC held working sessions to review the P.E. interpretation of and action relative to the FACI and Acceptance Documentation requirements. SSC has a good understanding of the requirements and has a working system which is capable of deriving and producing the necessary data and information. It was agreed at the meetings that the as-built list will contain information to the electronic box drawing and serial number, ECO effectivity, etc. The detailed information relative to the part and component serial and drawing numbers of equipment within the box will be retained by SSC as part of the internal system and made available to the Project Office when requested.

6. Working sessions were also successfully conducted to assist SSC in providing suitable ICD compliance information at FACI. The matrices identify the ICD, the equipment and requirements, and the manner in which the compliance was determined.

7. The Project Office review of the SSC Qualification Test Program (PM-1188-X-A) has been completed and the response prepared. Basically, the SSC revision to the original plan ignored the Headquarters requested corrections of deficiencies noted during the review of the original Qualification Test Plan. Furthermore, the rewrite consisted mainly of "dequantifying" the major test parameters and limits and/or variances to which the parameters would be tested. The plan is tantamount to a resume of tests to be performed. The Project Office response includes appropriate comments to the deficiencies contained in the plan.

8. Derivation of the Project Office response to the Customer Acceptance Definition (PM-1220-X-A) is aided by recent decisions and agreements concerning Acceptance and FACI generally, and the content of the CEI Specifications specifically. Only a few controversial items remain to be resolved.

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9. A film/processing meeting was held at Perkin-Elmer on 21 May. Eastman Kodak presented their data for type 1414 in four developers: MX-819, MX-819 modified, MX-641, and Versamat B. The meeting was generally inconclusive since no one in attendance from Perkin-Elmer was in a position to make a decision and those that were present were too set in their ways to look at the new data objectively. Since 1414 is similar to SO-380, it could be processed in the same manner as SO-380. However, some of the data indicated that there were other developers that had significant enough advantages to be considered for routine processing of 1414 vice their currently employed modified Versamat B chemistry. The Project Office has recommended that Perkin-Elmer initiate a test series to determine for themselves which chemistry would be best.

10. The Post Flight Analysis (PFA) Working Group met at Headquarters on 20 May. Minutes are being prepared and will be distributed.

11. The data packages for 14 spare AVE boxes were reviewed this week at P.E. The data appeared adequate and in order. The Project Office feels that one of the most critical things to check is the spares configuration to make sure all flight models can be supported. However, it is still the Contractor's responsibility to maintain the spares - both operationally and from a configuration standpoint. Spares for the SSTC's are to be ordered from AC this week.

12. Encoder malfunction trend analyses have been obtained from the Contractor and will be examined by the Project Office to fully assess the encoder situation.

13. The Master Schedule was reviewed at the Monthly Managers' Meeting but complete resolution and approval of the schedule put out by the scheduling group is not possible since MWC had not completed their schedule evaluation. In general it appears that one-shift operation can be accomplished at SVIC in the forward section buildup starting with the second system and for the midsection starting with the fourth system. It also appears that the schedule will permit RCA to reduce their seven-day-a-week effort starting almost immediately.

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14. The question was raised as to the responsibility of the SVIC for overall system approval on the West Coast. Paul Heron stated that under the present contract he was not responsible for system readiness certification but only for SBA readiness certification. Col. Buzard indicated that he would provide the necessary direction to make the SVIC responsible for certifying total system readiness. Heron also agreed to prepare a charter for a review board who would perform the functions of a material review board at a system level. The responsibility of this group was discussed in some detail to provide guidance for Heron.

15. P.E. has completed preparation of a MAF document which they plan to present to the Government for use in determining on-orbit fee. This document will be reviewed to determine the difference between it and a similar document prepared by the Project Office. It is expected to resolve the differences and to finalize the document prior to first article acceptance.

16. P.E. was notified that the Government would consider their submission of a cost plus incentive proposal for follow-on program instead of the fixed price proposal requested in the RFQ. P.E. was asked to review the RFQ to determine any changes or clarification that might be needed under the new type proposal. They determined that the only changes needed as far as they were concerned were minor changes in the wording to indicate that the proposal should be cost rather than fixed price contract.

B. Development Model

1. Forward Section - The major activity during the past week has been the implementation of an out-of-schedule "twist test" to determine the affect of vibration induced structural deformations on payload tracking and stacking. Testing began on 19 May and is now about 50% complete. An estimated six days work will be required to finish the forward section buildup following completion of the twist test.

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2. Mid Section - During the past week the SU was removed from the midsection for reloading. When the SU was opened, caging band on the "A" side bulkhead (spider) was found to be broken. A replacement band was obtained from Danbury and installed. Post reloading electrical checkout of the SU uncovered problems. After completing loading of the SU into the midsection, will run R&I test procedure, light leak check, and analyze test results prior to mating. Estimate date availability for mating is 27 May. Film path pressure tests have been repeated twice after attempts to patch the leaks; however, the leak rate does not appear to be decreasing.

C. Flight Article #1

1. A focal plane drive problem has developed on Camera "B". The problem does not appear to be in the platen. The electronics (F&E) box mounted in the compartment is suspect. The platen is being installed in the camera. If the F&E box is the problem, the midsection should start to move into the Chamber on 23 May. The in air photo tests should start on 25 May.

2. The supply leak rate now appears to be acceptable.

3. P.E. is preparing a message which will indicate that Project Office test requirements have added an additional 4.5 days to the flow and if the additional tests use up too much film that five more days will be required to change the film load before shipping. The 4.5 days consists of 10 hours of additional chamber testing and 6 hours of additional post chamber testing. The rest of the time is related to additional photographic processing requirements.

D. Flight Article #2

No major significant activity this week. The platens are being reworked as well as other "tweaking" and parts replacement as reported last week.

E. Computer Facility

1. The computer facility Users' Guide was published and distributed to 36 users. Modification and additions to the Guide will be published as required.

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2. The magnetic tapes (approximately 600) currently being numbered and labelled in a uniform manner.

3. The technical staff has been providing continuing support to the "C" support group, SSC, and SETS. Support is primarily in the areas of job control language and interpretation of system diagnostics.

III. Meetings Requiring Participation of Headquarters Personnel

<u>Date</u>	<u>Subject</u>	<u>Attendees</u>
<u>P.E.</u>		
26 May	System Improvement Studies Review	
26 May	Qual Program Discussions	
27 May	Monthly Technical Review	Staff
<u>LMSC</u>		
27 May	Display Mode Subgroup Meeting	
<u>Itek</u>		
25 May	Review Earth Resources Study	Burks, Kohler
<u>Westover AFB</u>		
26-28 May	Acceptance Team Meeting	Burks, Kohler, 27 May only)
<u>Headquarters</u>		
28 May	FY 1971 SETS Tasking	Staff

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PMO/PRS/OSP

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