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BYE-107507-70
Copy 10 of 14
12 June 1970

MEMORANDUM FOR: Director of Special Projects

SUBJECT : Photo Reconnaissance Systems Report No. 44

I. CORONA

A. Accomplishments

1. Mission 1110 was successfully completed with the "air" recovery of the second bucket. This half received a MIP of 95, though quality variability exceeded that of the first half. The SO-349 was exposed through more narrow slits, thus decreasing the exposure time; however, there was no noticeable difference between the SO-349 and the 3404. The PET meeting is scheduled for 16 - 17 June 1970. This meeting is one week earlier than planned primarily because of some down time planned at the Westover facility and to learn as soon as possible about the Mission 1110 focus problem. This is particularly important in view of the possibility of launching another "C" mission on short notice.

2. The CR-13 block test was completed.

3. The CR-14 HIVOS test was completed.

4. Itek component test box procurement has been accomplished. Estimated date for installation is 22 June 1970.

B. Problems

CR-12 "Dr. A" evaluation resulted in a decision to adjust the steering rollers to decrease film tilt in the format area. "Dr. A" and block test will be rerun after satisfactory adjustment. Thermal film lift and focus analysis is continuing.

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SUBJECT: Photo Reconnaissance Systems Report No. 44

C. Projected Status

1. CR-12. Steering roller adjustments.

2. CR-13. Storage preps.

3. QR-2. Block preps.

4. CR-14. "Dr. A" and block preps.

5. CR-15. Temporary storage.

II. HEXAGON

A. General

1. There are two optical bar encoder oscillation problems. The first, which P.E. understands well, has occurred only at the encoder level. The oscillation frequency has been around 250 KC and is the result of a low phase margin. A capacitor addition solves this problem. The second oscillation has occurred on the Development Model on the West Coast. The frequency of this oscillation is 14 KC and this oscillation is not understood. Any spurious oscillations on this encoder can cause the platen to lose sync with the optical bar and crash into the stops. In addition to working the oscillation problem, P.E. is working on a concept which will sense anomalous platen operation and effectively "apply the brakes" before the platen crashes into the stops.

2. The contaminant from the air bars, recently returned from the field, has been analyzed. The air bars were clogged on the inside by aluminum oxide peices of an internal air filter which had been improperly crimped into place. The source has been eliminated through a procedure change. Emulsion buildup also occurred on the outside, apparently after the holes were clogged. A P.E. report is available.

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SUBJECT: Photo Reconnaissance Systems Report No. 44

3. A review of the proposed HEXAGON Mission Accomplishment Factor (MAF) Plan was conducted by WCPO and SETS personnel prior to transmittal to Headquarters. A study of the availability/accuracy of attitude data to be used in the HEXAGON Operations Performance Estimate Software is underway. Preparation of inputs to the HEXAGON Reports Control Manual, temporarily put aside due to other operations support requirements, have been resumed.

4. The interface adapter box from PE Aerospace for use between the SSTC and the 360/65 has been delivered and successfully tested at the WCPO. Version 18.6 of the 360 operating system has been generated and is now undergoing testing. A sixth IBM 029 keypunch was delivered on 9 June. The IBM 360/65 and its related peripheral equipment have passed the GSA acdeptance test. During thirty consecutive days, beginning 7 May and ending 9 June, over 90% availability was recorded.

5. SSC was granted subcontract approval to proceed with the procurement of SSTC spares from AC Electronics. The $350,000 ROM does not include the sell-off cost. AC will not commit to a delivery date until the method of testing and sell-off has been negotiated. Two optinns are being considered:

a. Use some available SSTC, probably at Building 156, to test 10-12 cards at a time by running the entire SSTC Acceptance Test Procedure (ATP). This takes about three days.

b. Buy one card at a time and have AC prepare special test sheets reflecting the protion of the ATP necessary to certify a given card.

Since the entire ATP is only two or three days, Option 1 seems to be the better choice.

6. SSC has been asked to confirm a 3 August 1970 date for delivery of SSTC #5 to VAFB. This request for confirmation was prompted by knowledge that SSC is considering buy-off of SSTC #5

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SUBJECT: Photo Reconnaissance Systems Report No. 44

(5A1 and 5A2) and the Walter Kidde forward-section vent valve. P.E. will advise the Project Office as to whether these items would be FACI'd as components later or submitted, in the future, for completion of the forward film path FACI. The passive articulator had successfully passed its qual vibration tests, but the recently redesigned active articulator has been having serious difficulties in passing its qual vibration requirements. Testing of this articulator, in a breadboard configuration at qual levels, will be accomplished within the next few weeks, and it is felt, with the recent ECO's that will be incorporated, that the design will prove to be a valid one. Final qual will be conducted on the P-3 active articulator sometime in August. In addition, a number of discrepancies between the acceptance requirements and the acceptance tests need to be resolved.

9. A meeting was held on 11 June with the associate contractors to review for General King the program status and schedule prognosis to first flight. The Sensor Subsystem is still the pacing item towards the 17 December flight date; however, a potential schedule impact may result from recent determinations by Lockheed that lateral accelerations at the reentry vehicle locations are approximately twice the design value. If this analysis is born out, it will require some redesign at both the RV and Satellite Basic Vehicle which would have an impact on the flight schedule.

10. SSC is scheduled to deliver the proposal for the follow-on contract on 15 June and a meeting is scheduled at SSC on 16 June to review in detail the basis upon which the costs were established.

13. Col's. LeHuereux and Buzard will visit Headquarters on 15 June to brief Headquarters personnel on the Air Force incentive plan for use in follow-on procurements.

12. The mode for conducting operations at the STC was discussed with Gen. King. His position was that the operations would be conducted by a three-member team operating out of the Walnut Room at the STC. This team would be comprised of a representative from SPD, SPO, and SSPO. He stated that he expected the contractors and the aerospace technical advisor to form an advisory team to the

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management group. He stated that the TA and contract personnel would have no line authority but would serve as a staff to the Government representatives. He confirmed that he expected the SSPO to have complete responsibility for the sensor subsystem and for all analysis of sensor difficulties. He also expects the SSPO to see that the TA is adequately supported in all of the functions which are assigned to them. The proposed method of operation should be very satisfactory and is in accord with the responsibilities established in the NRO management agreement.

B. Development Model (SDV-III)

Forward Section - All scheduled activities of the forward section buildup cycle have been completed. During MWC system testing on 6-10 June, however, the heat shield and cannister were removed from RV #2 and badly wrinkled film was observed on Side B. Investigation revealed that the wrinkle most likely occurred during P/L rewind following the light leak test and probably resulted from rewinding film against a lowered builder roller on T/U No. 1. Corrective action is in process at this time and builder roller operation and tracking on RV No. 1 will be reverified. This reverification should have no impact on scheduled system integration.

Mid-Section - The film drives and crossovers were returned to the field after repair by SSC. The air bars were found to be clogged from aluminum oxide and some concern over the limited calendar life (LCL) status of the item has resulted. A decision was reached to replace the OB encoder on Camera "A" to correct the improper platen signal. The replacement will take place as soon as a replacement unit can be received from SSC. Until the replacement is received, the platen motors will be disconnected. The mid-section testing in the R&I area is scheduled for completion on 13 June. A data review has been scheduled by the WCPO with SSC for 13 June. The turnover of the MS to SVIC is scheduled for 14 June, and mate should begin on 16 June.

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SUBJECT: Photo Reconnaissance Systems Report No. 44

C. Flight Article #1

The midsection went into Chamber "A" at 2230 on 11 June. In-air photo tests should start on 13 June.

D. Flight Article #2

P-2 has completed its post-vibration and acoustic TCA tests with good film tracking at all the velocities tested. There was one very minor problem which was a very slight increase in the TCA leak rate. In addition, there is planned a three-to-five-day maximum effort on P-2 to attempt to reproduce the P-1 problems involving the position pulse 180° reset, thought to be caused by faulty platen encoders.

E. Flight Article #3

Both optical bar tests in Chamber "D" have been completed, and TCA build-up has begun. It is planned, beginning with P-3, to operate the TCA (using the constant velocity box but not dynamically transporting film) in the clean room area prior to installing it into the SBA simulator in the high bay area.

III. Meetings Requiring Participation of Headquarters Personnel

Date	Subject	Attendees
P.E.		
16 June	Follow-on Cost Briefing	Patterson, McDonald,
17 June	Take-up Shaft Keyway Meeting	
RCA		
16 June	P-2, 3, 4 Buy-Off	

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SUBJECT: Photo Reconnaissance Systems Report No. 44

Date	Subject	Attendees
NPIC		
16-17 June	1110 PET Meeting	Burks, [redacted]
Hqs.		
15-19 June	Computer Discussions	[redacted]
EUROPE		
13-23 June	Color Takk Force Bfrgs.	Kohler
Annual Leave		
Mr. Patterson		17 June - 2 July
Mr. Snyder		15 - 19 June

[redacted]
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