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BYE-108062-70
Copy 10 of 14
7 August 1970

MEMORANDUM FOR: Director of Special Projects

SUBJECT : Photo Reconnaissance Systems Report No. 52

I. CORONA

A. Accomplishments

1. Mission 1111 (CR-12) continues to operate satisfactorily with approximately 87 percent of the second half completed. The first half of this mission has received an MIP of 105 from photography at 129 NM altitude. Though a subjective number, this MIP indicates the very good technical performance of CR-12. Recovery of the second half is tentatively planned for Sunday, 9 August 1970. PET meeting is scheduled for 25-26 August at NPIC.

2. Review of the imagery obtained with glass and gelatin filters resulted in a decision to use gelatin filters for the remaining operates.

3. All systems are now located in Building 152 and activities are normal. The formal class sessions for training of technicians have been successfully completed. Work of setting up collimators continued.

4. The 1004 has been disconnected, crated and is scheduled for pickup today.

5. Itek West Coast has completed initial testing of a newly designed slit fail-safe cam. The new cam will provide increased flexibility for fail-safe slit selection and eliminate necessity for cam changes. Some redesign and additional tests will be completed prior to system flight use.

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B. Problems

None.

C. Projected Status

1. CR-13. Pre-storage preparation.

2. QR-2. Backup storage.

3. CR-14. Out of temporary storage. Currently in pre-storage preparation.

4. CR-15. Out of temporary storage. Preparation for tracking tests is in process.

5. CR-16. Received at Bldg. 152 from Itek West Coast and currently in incoming acceptance test.

6. CR-8. Buy-off scheduled 11-12 August 1970.

I. HEXAGON

A. General

1. A briefing was presented to the Director of Special Projects by SSC on the application of near real time readout to the HEXAGON system. Mr. Crowley stated after the meeting that he would like to have the briefing reduced in length and, with certain modifications, presented to the Technical Advisory Panel at their meeting of 23 August.

2. Discussions were held with SSC on the schedule for delivery of systems under the current contract. At the present time, SSC is still planning their manpower levels to support a delivery schedule which calls for the delivery of the sixth item in May 1971. The Government need date for this item is September 1971. The contractor was notified that the Government intends to enforce the delivery schedule in the contract and that all work on the follow-on program should be

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limited to long lead time requirements necessary to support a December 1971 delivery of the seventh flight unit. The contractor has expressed concern over the way the schedule is now carried in the contract and has asked for an opportunity to discuss a rescheduling plan. This has been tentatively set for 25 August.

3. P.E. presented to Headquarters, SETS and [redacted] their plan for control and acceptance of spares. The procedure and data package appear to be adequate. Quite a few AVE spare boxes have been received and are being controlled by the property accountability people at P.E. following our buy-off; these of course, will become GFE. Additional changes, "ECO's", can be expected to these boxes because the qual program on some of the black boxes has not been completed. However, contractor still has the responsibility to maintain configuration of spares.

4. P.E. is starting to put together a "pipe line plan", which would describe how they will replace a spare in the event the spare had to be used in the manufacturing flow.

5. P.E., SETS, and EK agreed Thursday on the design of a gauge which will measure the core pressure of each film roll. The only core modification required is the incorporation of six small metal blocks on the outer ring which will allow the necessary displacement measurement for the determination of core pressure. EK will make the gauge. This will be at no cost to the Government. P.E. will make the small targets and install them on the cores. There will be three measurements made per side of the film roll making a total of six blocks on each core. The only other possible modification may be to a polyurethane pad on the supply brake. For S/N 003, if this retrofit is necessary, it can be done when the flight film is loaded in the field. This device is required by 1 October.

6. EK performed a series of film processing tests during this week using Type 1414 film and MX-641 Chemistry. Their tests were designed to verify replenishment rates and other parameters which P.E. is trying to achieve in their processing lab. P.E. decided processing parameters can be achieved but we may have to deviate slightly from our initial processing specs. This does not appear to be too critical.

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7. The QA/QC activity at SSC/WCFO was reviewed and found to be well organized and operating well.

SSC has nine (9) people and is requesting five (5) additional to support the increased effort through January 1971. The policies are clearly established (Section 17 of SSC QA Manual), and the implementing procedures are being completed.

The head of the WCFO reliability reports to the Manager of QA at Danbury and serves as the QA representative on the field MRB. The field group provides a daily QA Report and a Weekly Field Inspection Report to SSC and to WCPO.

The QA operation conducts a shift carry over briefing and discusses the QA log with the new shift. Notably, a shift is not closed until all of the paper work is completed; reports, forms, briefing, etc.

In the future, the WCFO QA office will send a team to SSC prior (approximately one (1) week) to shipment of flight models. The team will review applicable documentation and will conduct an inspection of the AVE. A subsequent Receiving Inspection Report at SVIC will provide a basis for comparison of vehicle status before and after shipment. Ostensibly, the WCFO/QA has reject authority - it will be interesting to see how this works in practice.

It was suggested by the WCFO/QA that any future ICD's (not probable in this program) include QA/QC controls to assure compatibility. Such uniform controls would preclude some of the administrative/management problems which have developed between contractors.

8. Field Test Instruction written by SSC/WCFO are reviewed and approved by WCPO. These instructions are similar to MRB actions relative to equipment and procedures; WCPO approval is most advisable.

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9. WCPO and SSC/WCFO conduct pre-meetings prior to participating in the SVIC chaired Engineering Buy-off meetings after tests. Summary reports of the meetings are written by SVIC and a copy provided to WCPO. It is planned that Flight Readiness Certification meetings and reports will be conducted and reported in a similar manner.

10. A summary report of test activity on a per system basis will be provided by WCFO and will include the QA activity as well as the engineering and test information.

11. In the OOPS meeting held Monday, 3 August, the problem of tape recorder management was discussed. The recording demands on the vehicle tape recorder and the playback opportunities over a tracking station appear to dictate the use of POGO as a tape recorder readout station. Since delivery of magnetic tapes from POGO normally takes from seven to ten days, reduction by the 360 of operational telemetry data contained in tape recorder dumps over POGO for post flight analysis activities will be delayed significantly.

12. The reliability of microcomparator data input to the FIDAP software was discussed with [redacted] of Westover. Westover personnel plan further microcomparator readings of the P-1 material to determine the reliability and to provide a correlation between the microcomparator and the auto-microdensitometer.

[redacted]

14. New procedures and standards for data transmission on the SSTC 2701 data link have been coordinated and implemented.

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15. The program to produce two reports from the inventory master file [redacted] has been completed. The inventory master update program is continuing.

16. The technical staff has completed a program (UNIVAC 9300) to read and compare paper tape to magnetic tape. The program has been used successfully.

III. MODEL STATUS

A. Development Model (SDV-III)

1. During the post acoustic vertical baseline of D Model Sensor Subsystem, the "B" side camera appears to have bound inthe area of the fine film path. The B side camera (mono B Task 6.6 of FTI WVT-30003. The camera shut down without an ESD: after the four programmed shutter cycles, however, capstan and tension sensor performance during the run was somewhat erratic and during rewindtthe capstans saturated. No subsequent operations were attempted on the B side.

2. In addition to the "B" side malfunction, the "A" side entered a self-generated ESD condition while attempting to run task 6.5 of FTI WVT-30003. The ESD was a result of low input tension.

3. "A" Side Camera - Upon removal of the "A" side looper cover, Looper "A" was found to be jammed by a (one) screw. The screw had apparently backed out of the flexure installation at the frame articulator/looper interface. (This flexure is located between the output of the "A" side looper and the input to the "A" side film chute.)

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4. "B" Side Camera - When the "B" side looper cover was removed, two screws were noted missing from the flexure installation at the frame articulator/looper interface. (In the case of the "B" side, this is at the input to the looper.) The missing screws apparently allowed the flexure mounted roller to skew the film, which subseqqently produced a fold-over in the film drive assembly area.

5. Findings to date indicate the screws mentioned in paragraphs three and four came loose during acoustic test and were sole cause for both "A" and "B" side failures. These screws showed no signs of having been epoxied. All missing hardware (screws, spacers, washers) has been located and removed from the system.(with the possible exception of one washer).

6. The decision was made to discontinue testing and move the vehicle out of the acoustic cell into the vertical integration stand where the shroud was removed (6 August 1970). The cameras will be accessible for inspection during the evening of 6 August. A detailed report of the fialures will be submitted as sonn as the cause of the failures has been established.

B. SV-1 (S/N 003)

Midsection

1. In-air chamber preparation tests were completed on 6 August and film processing and evaluation is in work at this writing. If all is well, chamber pumpting will commence Saturday, 8 August, and the 70° test should commence either Sunday night or Monday morning. The system is reported to be tracking well.

2. Several electronic boxes are scheduled to be changed prior to shipment with the exception of the MFA (Measurement Filter Assembly) which is a non-critical box. This box will be replaced in the field. The other boxes will be replaced following Chamber "A" testing and a system baseline will be run to reverify performance. The boxes which have been fully qualified will receive a normal acceptance test at the vendor. Boxes which have not been fully qualified will receive a functional test at 70°, 40°, and 100°.

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q 3. The "kluge" box which contains the logic circuitry for the platen stop switches will be removed after chamber testing since it is not of flight configuration. P.E. has no plan at this time to put in a flight configured box since the design is not complete. Flying S/N 003 without this feature may not be too severe a risk because: (1) the black boxes which cause the P-1 platen failure will have been replaced, and (2) the OB servo box will have the fix in it which stops OB creep. OB creep had contributed to the "platen kissing" problem. The stop switch feature is a precautionary one and not mandatory for performance.

Forward Section

1. Ten of the thirteen forward section cables have completed R&I and have been installed in the FS. Completion of the checks on the remaining three cables has been delayed due to missing AGE adapter cable connectors.

2. MWC now estimates that they will complete their mods on the first RV no sooner than 14 August. (The TUA's will remain in the AGE dollies until MWC mods are complete.)

C. SV-2 (S/N 002)

The TCA is in the clean room. Platens and film drives are not yet available for installation. Midsection testing in Ready Room "A" is scheduled to start on 15 August.

D. SV-3 (S/N 004)

1. P.E. is evaluating a change in the TCA buildup plan which would allow pre- and post-TCA vibration baseline to be determined using the loopers instead of putting the TCA in the SBA simulator. The major advantage of doing this is a 20-day time saving. The major disadvantage appears to be lack of knowledge regarding the coarse

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film transport system, since there is no simulated supply or take-up under this scheme. Another unknown at this time is the extent of data we can get on the fine film transport system. However, this is still under study and the complete picture is not known at this time. This plan would allow P.E. to go on a single 10-hour shift.

2. S/N 004 is still waiting for platens and film drives to complete TCA buildup.

III. Meetings Requiring Participation of Headquarters Personnel

Date	Subject	Attendees
P.E.		
8-16 Aug	Monitor S/N 003 Chamber "A" Acceptance Tests	
12 Aug	Review Planning for Technical Advisory Board Meeting	Patterson
13 Aug	Modular Measurement Package Review	
LMSC		
12 Aug	RV IFWG	
13 Aug	Schedule IFWG	
14 Aug	Ops IFWG	

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Date	Subject	Attendees
Westover AFB		
11-13 Aug	CCB Meeting	Patterson (11 only), Kohler
WCPO		
13-B4 Aug	Sequencer (13A1) Technical Interchange	
Itek		
11-12 Aug	CR-8 Buy-off	
Annual Leave		
10 - 21 August		

[redacted]

TPA/PRS/OSP

Distribution:
Cy 1 - D/OSP
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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 -

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