~~CORONA~~ ~~HEXAGON~~

BYE-7390-70
Copy 10 of 14
23 January 1970

MEMORANDUM FOR: Director of Special Projects

SUBJECT: Photo Reconnaissance Systems Report No. 24

I. CORONA

A. Accomplishments

1. The UTB meeting, which convened on 16 January, resulted in a plan, with assigned action items, to prepare CR-11's flight for optimum possible UTB results. These actions included review of launch and orbit effects, hardware impacts, thermal paint pattern, S/C heaters, and review of UTB flight history.

2. Mission 1108 PEIR was released, and the PET was convened 13 and 14 January. There were no unusual aspects.

3. The Dr. "A" HIVOS material from CR-12 was delivered to Westover for data reduction.

B. Problems

1. Evaluation of the CR-10 HIVOS data indicates a slit width motor problem. This, plus instruments "ramp up" and "ramp down" time differentials, are being investigated.

2. Tracking problem on CR-13 apparently was caused by the "B" T/U flanges. The T/U was changed.

C. Projected Status

1. CR-10. Investigation of slit width and ramp times.

2. CR-11. Flight Preps.

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SUBJECT: Photo Reconnaissance Systems Report No. 24

3. CR-12. Block Preps.

4. CR-13. Tracking.

5. QR-2. Acceptance.

II. HEXAGON

A. General

1. The MPR CDR pre-meeting was held on 16 and 19 January. The CDR was held on the 21st and 22nd. [redacted] and V. H. Webb attended these meetings. No major problems were uncovered. (see also para 1

2. The Naka Committee met at LMSC on 20 January and in executive session on 21 January (having previously met at P.E. on 5 January) to prepare their assessment and conclusions with regard to the adequacy of the CORONA/HEXAGON overlap. In essence, the findings were that the June assessments (50% probability of launch within one month of 17 December 1970, 75% within three months, and 95% within six months) were still valid, despite slippages of most milestones of as much as a month, and the Committee further recommended that there be no additional CORONA procurement.

3. The RV buy-off for RV 1 was held by the Air Force at McDonnell on 20 January with a targeted shipping date of 27 January. At the meeting, the Project Office was to certify that the take-up was ready for shipment. However, P.E. had not informed their field office of additional alignment tests that were required after vibration testing at McDonnell. The Project Office required that these tests be run, since, if there was a roller misalignment discovered at Lockheed, the RV/TU would have to be returned to McDonnell.

4. The DM-2 take-up was bought off at RCA by P.E. on 20 January and was shipped to McDonnell on 22 January. This buy-off was much better organized than DM-1, with all of the supporting documentation

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available. Several problems remain on DM-2, however, including alignment shifts during vibration, builder roller latch binding, and a brake failure. The 40° temperature test was waived due to schedule pressure. However, this will not be waived on subsequent take-ups. The DM-3 buy-off is tentatively scheduled for 31 January. This should have no program impact, though it is a late delivery to the present integrated schedule.

5. It was decided at the chemistry meeting that a series of image evaluation tests should be run with the various materials and chemistries, particularly since the manufacturer is proposing a UTB version of SO-349 and a new chemistry, 819. The existence of this new material and new chemistry was not brought to P.E.'s attention at the meeting. It is also felt that Westover might be included in this test series. The current modified B chemistry will be used until such time as a decision is made on the material/chemistry combination after testing is complete.

6. Both rolls for the First Flight Unit test film will be delivered on 30 January. There will be no other large roll deliveries until early March. This is because of limitations in emulsion batch manufacture at Eastman-Kodak.

7. A meeting was held at Eastman-Kodak with P.E., SETS, and Headquarters, where agreement was reached on winding parameters for building film stacks. However, the tolerance on core pressure is a matter of controversy. E.K. calls for such a large tolerance that either the core integrity or stack integrity may be affected. E.K. will be requested to gather enough data to reduce the tolerance.

8. The supply core contamination problem reported last week has disappeared. No corrosion was involved. The vendor is going to reclean all the cores that were affected.

9. The relocation of the A/P is now underway. Hiller Corporation has been officially notified about the cancellation of the lease. It is hoped that during the first week of February, a meeting can be held with Lockheed and Hiller to determine the refurbishment of the A/P and the termination

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SUBJECT: Photo Reconnaissance Systems Report No. 24

of the lease. Mr. Verjinski of OCS is now being processed for a transfer to the West Coast effective 1 March. The Office of Computer Services is also assigning Mr. Lyn Melville to the staff on the West Coast, to work for Mr. Verjinski as a senior systems programmer. He is also being processed for relocation to the West Coast on or about 1 March. The configuration of the 360/65 and its peripheral equipment has been transmitted to IBM, and IBM has agreed to the delivery date of 9 March and the operational date of 23 March, which makes it compatible to the installation and checkout and the termination of the 360/50 on or about 1 May. The construction and modifications to Building 152 are now in their final design phase. LMSC will be going to competitive bids during the week of 26 January, and a review of this will be made on the West Coast during the first week of February. Mr. Verjinski will be TDY to the West Coast during the week of 26 January for the interface meeting with Perkin-Elmer and SETS. He will also be reviewing the software requirements and the computer phaseover from the 360/50 to the 360/65.

10. Operations

The CDR for the Mission Performance Reporting (MPR) routines of the operations software program was held at TRW, Redondo Beach, on 21-22 January. At previous meetings on 16, 19, and 20 January at [redacted] several hundred Design Problem Reports (DPR), submitted by the various participating government organizations, were reviewed, screened and assembled for presentation to the software contractor. Over 290 DPR's survived the screening. All were resolved at the CDR. The contractor was cooperative and patient when clarification of a disputed area was required. TRW had available, or on immediate call, personnel to thoroughly discuss questions on any and all MPR routines and to develop a clear understanding of troublesome subjects.

(b)(1)
(b)(3)

With all the smoothness of the CDR, one still cannot help but wonder at the staggering complexity of the software package. To have it all ready by October will require maximum effort even if no further problems are encountered, especially considering the number of DPR's

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on the MPR routines and the fact that the total package has ten such routines, each with its own family of subroutines. Manual overriding and data manipulation for the first three or four flights appears to be a significant portion of the operational phase.

B. Development Model

The QC test will be completed in Ready Room A today, and the supply will be removed to begin the process of installing non-light-struck film. Because of a rework in the film exit vestibule, which, it is predicted, will require five days, the horizontal baseline in Ready Room A will not occur before 1 February 1970. P.E. states that this will not effect their new delivery date of 15 March, as presented at Headquarters on 20 January.

C. Flight Model #1

1. Subsequent to replacement of the roller which had been damaged last week when the take-up was given the wrong commands, the system has been run in the stereo mode at all scan angles and at all V/h ranges. The system did not perform within spec; however, it did operate in all conditions. A retrofit will begin on 26 January on all elements which are now out of spec (i.e., metering capstan, loopers, platen B, brinelled rollers). The redundant side of the sequencer is inoperative because of a suspected short which resulted in the burnout of a voltage regulator. This does not effect the present testing, and this sequencer will continue to be used until either the qual or P_2 sequencer is available, at which time the P_1 sequencer will be sent back to RadInc for repair. The TCA is predicted to be available 10 February for installation into the SBA. That is the date which the SBA cabling will be completed by P.E. and the SBA will be given to Lockheed for their reinforcement of the TCA mounting bulkhead and hangers.

2. The SPO has been requested to set up a meeting asap at which SBAC is to define the structural fixes which they plan to incorporate. This will avoid P.E.'s installation of cables or pneumatic lines which would subsequently have to be rerouted because of SBAC's refit.

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D. Flight Model #2

Optical Bars A and B have been reworked, to correct the mirror coating problems, and Optical Bar A has met its requirements in Chamber C. Both bars are predicted to be available five days earlier than previously predicted, but are still on the critical path.

III. Administrative

Meetings Requiring Participation of Headquarters Personnel

Date	Subject	Attendees
PERKIN-ELMER		
27 Jan (PM)	SSPO Managers Meeting	Patterson, [redacted]
28 Jan	Monthly Technical Review	Staff
29 Jan (AM)	Follow-on Diagnostics Requirements	[redacted]
29 Jan (PM)	Film Transport Simulation Status	[redacted]
29 Jan	Disturbance Rebudgeting	[redacted]
WEST COAST PROJECT OFFICE		
27 Jan	Computer (360/65) Hardware Configuration Meeting	[redacted] Burks, Johnson
SBAC		
27 Jan	R-Day Countdown Working Meeting	[redacted]

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Date	Subject	Attendees
HEADQUARTERS		
27 Jan	SETS Status Review	Staff
28-29 Jan	Management Discussions	[redacted]
RCA		
31 Jan	DM-3 Buy-off	[redacted]

[redacted]
PMO/PRS/OSP

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cy 4 - EO/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 - OSP/RB
cy 11 - OSP/PRS:File
cy 12 - OSP/PRS Chrono
cy 13 - [redacted]
cy 14 -

DDS&T/OSP/PRS/JWL:ncc/X5725 (23 January 1970)

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BYE-7503-70
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30 January 1970

MEMORANDUM FOR: Director of Special Projects

SUBJECT: Photo Reconnaissance Systems Report No. 25

I. CORONA

A. Accomplishments

1. The Thermal Meeting at Headquarters on 23 January finalized CR-11's UTB approach. The desired temperatures are expected to be maintained by trimming the thermal tape pattern and closing the launch window. Spacecraft heaters will not be installed for this mission. Additional thermal studies are continuing for any impact on future missions.

2. Mission 1109 orbit was selected, consistent with the desired thermal control. It will be a 19-day mission, at an inclination of 88°.

3. Dr. Martin, PSAC Secretary, received a CORONA briefing and a tour of the AP on 27 January.

4. Itek's recommendation to modify the constant tension assembly by incorporation of double negator spring was reviewed and approved.

B. Problems

1. Investigations of CR-10 slit width and "ramp up-ramp down" problems continue. Slit width problem was attributed to a faulty clutch assembly. The clutch is being replaced. "Ramp up-ramp down" time differential appears to result from the drive motor amplifiers.

2. CR-13 tracking tests reveal interference between the film path and the SRV "A" water seal and between the film path and the SRV "B"

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SUBJECT: Photo Reconnaissance Systems Report No. 25

felt pad. The water seal position will be adjusted, and the felt pad will be trimmed to provide adequate clearance.

C. Projected Status

1. CR-10. The clutch is being replaced. High efficiency amplifiers are being evaluated as replacements for those in the drive motor.

2. CR-11. Flight Preps.

3. CR-12. Block Tests.

4. CR-13. Tracking.

5. QR-2. Acceptance at Itek.

II. HEXAGON

A. General

1. The collimators and associated equipment for the A-2 chamber arrived at Building 156 on 29 January.

2. Dr. Martin, PSAC Secretary, was briefed on the SBAC HEXAGON Program and toured Building 156.

3. The Project Office has established a team to independently assess the performance of the metering capstans tested by Perkin-Elmer to date. The primary objective of the team will be to verify the Perkin-Elmer claim that the metering capstan problems are now understood by Perkin-Elmer, and that the problem is under control. The team members are [redacted] Project Office; [redacted] SETS. The review will be completed the week of 16 February.

The team met with Perkin-Elmer system analysis representatives on 29 January. Bench test data taken on the engineering, P-1 and P-2

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SUBJECT: Photo Reconnaissance Systems Report No. 25

model metering capstans, and development model system level data was reviewed. Copies of Perkin-Elmer memoranda describing the tests and the raw data are being made available for the team to evaluate.

The metering capstan bench test equipment was reviewed. The "test station" consists of a breadboard of the metering capstan servo electronics supported by standard test equipment (power supplies, bandpass filter, etc.) interconnected with clip leads. Flight metering capstan motors and encoders are tested at this station using a fly wheel inertia and by changing the gain in the breadboard electronics. In response to a question relevant to QC control, the responsible design engineer indicated that the test was run by design engineering and that QC "trusts them".

4. Perkin-Elmer recommended at a meeting on 29 January the deletion of some instrumentation on the follow-on procurement. The recommended deletions are the two multiplexers used to acquire ascent vibration data and the optical bar mounted DDAS used to acquire optical bar thermal data. The deletion of the vibration instrumentation assumes that some SBA vibration data at typical SS attachment points in the supply compartment, midsection, and forward section will be available. A few thermal sensors from each optical bar will be brought through optical bar slip rings. The deletion of the DDAS will reduce the number of thermal sensors on each bar from thirty to about three. The deletion of the above will result in a hardware subcontract cost saving of approximately $100,000 per system. Total cost savings will probably approach $200,000 per system.

5. Perkin-Elmer's redistribution of their disturbance budget was reviewed on 29 January. Perkin-Elmer had data only in those areas where an increase over the ICD limits was requested. No information was provided in those areas where a decrease is in order. In most instances this will not cause a problem as informal discussions between Perkin-Elmer and Lockheed indicated that Lockheed can accept the increases. The one exception is a large increase in pitch axis periodic torques resulting from film drag on the air bars. (The drag level will induce an offset on the supply tension dancer which will generate supply torque disturbances.) As SET's LIFTS analyses are not in agreement with Perkin-Elmer's, this problem will not be identified to Lockheed until the differences are resolved.

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6. The decision was made during the week to bring the two 40% film RH rolls back to Danbury from the West Coast in mid-February and reload the Development Model after the three axis vibration tests. This is necessary since Eastman-Kodak's delivery schedule was slipped because of a poor emulsion batch.

7. Perkin-Elmer's slow turn around of shipping containers and associated hardware for film deliveries is jeopardizing Eastman-Kodak delivery schedule. This problem has been repeatedly called to Perkin-Elmer's attention in hopes that they will do something about it. The first roll of P-1 test film is currently scheduled for delivery on 2 or 3 February, but this cannot be met unless Perkin-Elmer responds with the appropriate hardware by that time. The need date for this P-1 roll is scheduled for early March so no schedule slippage is expected.

B. Development Model

1. The film exit vestibule has been returned after a rework to stiffen the tension roller mount.

2. An erroneous reading is occurring on the looper position which is caused by oscillation of the looper and results in perturbation to the supply torque. The cause of the looper oscillation has not been identified but several fixes are being considered. Among them are a cabling change to read the looper position at a different time, or the addition of a satellite box to smooth the looper signal. A decision is required by early next week.

3. If a satellite box is the fix to the above problem, the Development Model configuration will include two satellite boxes and ten cabling modifications (connector saver fixes) which are not flight type.

C. Flight Article #1

The midsection, two camera assembly and supply are all planned to be ready for start of system assembly on 20 February. Perkin-Elmer

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expects the midsection back from SBAC on 2 February. Delivery date of the flight article is now planned for 30 May. This includes time for EMI qualification testing but does not include thermal vacuum qual testing in chamber A at 40 and 100°F.

III. Administrative

Meetings Requiring Participation of Headquarters Personnel

Date	Subject	Attendees
NPIC		
5 Feb (1000 hours)	COMIREX UTB Briefing	Staff
6 Feb	Color Task Force	Kohler
HEADQUARTERS		
3 Feb	Cost/Manpower Review	Patterson, [redacted]
4 Feb	Color Briefing to Mr. Duckett	Kohler
4 Feb	FACI Description	Patterson, [redacted] [redacted]
EASTMAN-KODAK		
3 Feb	Color Task Force Review	Kohler
RCA		
3 Feb	RCA Program Review	[redacted] Crowley, [redacted]

Donald W. Patterson
D/PRS/OSP

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cy 8 - C/SB/OSP
cy 9 - C/SS/OSP
cy 10 - OSP/RB
cy 11 - OSP/PRS File
cy 12 - OSP/PRS Chrono
cy 13 -
cy 14 -

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6 February 1970

MEMORANDUM FOR: Director of Special Projects

SUBJECT : Photo Reconnaissance Systems Report No. 26

I. CORONA

A. Accomplishments

1. Current plans for the AP relocation including installation and operation of the 360-65 computer at Building 156 were reviewed by LMSC on 4, 5 February. Facilities drawings are being finalized, and move plans initiated.

B. Problems

1. Investigations of CR-10 "ramp-up ramp-down" and slit-width control problems continue. The ramp problem is attributed to a faulty high-efficiency amplifier (HEA). Replacement of the faulty HEA with a functional unit from CR-16 is under consideration. The slit width control problem is now believed to result from a defective drive motor. A replacement unit is presently undergoing tests.

C. Projected Status

1. CR-10. Ramp and slit width control problem investigations continue.

2. CR-11. Flight preps.

3. CR-12. Storage preps.

4. CR-13. Functional tests.

5. QR-2. Acceptance at Itek.

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SUBJECT: Photo Reconnaissance Systems Report No. 26

II. HEXAGON

A. General

1. The privacy commo link between Building 156 and Headquarters was activated on 3 February.

2. SETS has completed a matrix which correlates test requirements (per the SS Performance Spec) with the SSC test plans, test procedures, and SS models. The task was complicated by the dynamic nature of the overall program as well as the unavailability of SSC test documentation. The matrix is to be a viable document which will be used to monitor the contractor compliance with the Performance Specification.

3. SSC is revising and expanding the Ground Performance Evaluation Plan (PM-1172-X) so that it can be used for P1 through P6 (PM-1172-X applies to the D Model only). The effort includes revision of test requirements, revalidation of tolerances, data reduction requirements, baseline definition, and predictive data, all based on actual data and experience gained from the D Model. The expansion of the document includes considerations for SVIC, VAFB, and better correlation between SSC and SVIC test data acquisition and analysis.

4. A recent review of SSC test documentation activity shows a decided improvement in SSC awareness of test planning, procedure, and data documentation requirements. The Mission Planning and Evaluation Group is working much more closely with the Test Procedure and Control Group to produce realistic and adequate test documentation. There still remains the problem of the insufficient time between the release of the test procedure and the conduct of the test. However, this problem is being worked by SSC and improvement is expected.

5. During this week, Eastman Kodak delivered the first P1 Chamber "A" test roll and the 60,000 ft. light struck film roll for P1 Ready Room "A" testing. The second P1 Chamber "A" test roll is scheduled for delivery 1 March. This delivery is entirely contingent upon Perkin-Elmer returning the shipping containers and associated hardware. P.E. now has all the large shipping containers. The need date for the Chamber "A" film as of this week is 5 March.

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6. Perkin-Elmer has informally notified the Project Office of a significant increase in film requirements with a considerable delivery increase during March. The Project Office does not feel that sufficient lead time is allowed for Eastman Kodak to meet the requirement of filling the orders. The full impact has not been worked at this time because we have not yet received Perkin-Elmer's official film requirements. As an example of their film increase, the original requirements for P1 were approximately 475,000 ft. of test and flight film. In addition to this 475,000 ft., a full back-up flight load was planned. Perkin-Elmer's new requirements for test film, including the two flight rolls, is approximately 700,000 ft. or an increase of almost 50%. The official P.E. requirements will be reviewed and validated by Headquarters prior to any new orders to EK.

7. Mr. Deveaux, from Perkin-Elmer, was at Headquarters and discussed the AVE and AGE Spares Control Plan. It was brought out that several documents are in preparation which describe how spares will be controlled both on the East Coast and on the West Coast. The preliminary information presented was satisfactory, and the Project Office is now awaiting the formal submission of the above documentation. AVE spares deliveries commence the end of this month, with the first delivery being electronic boxes from Perkin-Elmer Aerospace.

8. A briefing will be presented to the PSAC on 10 February. The scheduled briefing for HEXAGON is planned for three hours, with approximately an additional three hours of time for questions and answers. The sensor subsystem portion of the briefing will be shared by Mr. Maguire and Mr. Patterson in presenting a summary of programmatic actions which have occurred since the last briefing and the technical development program leading up to the present design of the system, including a discussion of the results of development tests which support the system meeting its performance objectives.

9. A meeting was held with Messrs. Maguire, Vinatte, Haven, and Patterson to negotiate the schedule impact of the late delivery of the midsection by Lockheed to Perkin-Elmer. The estimate submitted by Perkin-Elmer was 26 days of schedule delay and $640,000 of additional cost. After considerable discussion of the appropriateness of the figures, an agreement was reached to allow 26 days delay in the delivery date of P1 for fee purposes, and that no cost would be involved with this late delivery. Perkin-Elmer will, however, attempt to reduce that actual time through the working of multiple shifts and a 7-day week.

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10. The RFP for follow-on systems was reviewed in-house and comments of the reviewers were incorporated in the document. The document was transferred to Perkin-Elmer by courier 6 February.

11. A meeting was held by Mr. Kohler with personnel from Horizons to discuss their capability in accelerating the work which they are now carrying out on free radical film. The purpose is to provide the engineering data on that film which could be used to determine modifications to the HEXAGON camera which would be required to employ the film in the camera. Horizons will prepare a proposal covering this additional effort and how they would plan to carry out the necessary engineering tasks involved. The proposal will be presented to Headquarters in approximately a week. This effort is being coordinated with Mr. [redacted] in D&AD.

B. Development Model

1. The past week was spent working on the platen and loopers. The shutter latch solenoids were replaced, and the loopers were subsequently cycled through the looper test station. Platen "B" was found to have a nonparallel slit which forced a repair and recycle through the platen test station again.

2. The Supply was given a full assurance test in the SUTS.

3. System checkout is scheduled to begin 7 February.

C. Flight Article #1

1. The contract delivery date of the first flight vehicle to SBAC has been moved from 21 April to 31 May (with no cost increase). Perkin-Elmer will internally work against a schedule which results in an earlier, and at this time undefined, delivery.

2. The TCA went back into Ready Room "B", after the retrofit cycle, on Wednesday. Platen "B" will be installed over the weekend. Both platens will have their shutters reworked later. The platens will be reacceptance tested after the rework.

[redacted]

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3. The TCA is now being checked with the constant velocity box. A baseline test must be run with a sequencer prior to TCA vibration. The P1 sequencer is now being used on the Development Model. P1 will have to borrow back the sequencer for the baseline test. Any anomalies during the baseline test, which tie up the sequencer, will probably impact on the Development Model schedule. The next sequencer to be delivered (Qual Model) is scheduled for 14 February, and will be initially used on Flight Article #1.

4. Cable installation into the midsection is starting following the completion of the structural modifications by LMSC. DITMCO tests will be run after the cables are installed.

5. The TCA, supply, and midsection schedules are all tight to a 20 February scheduled completion.

III. Administrative

Meetings Requiring Participation of Headquarters Personnel

Date	Subject	Attendees
SAMSO		
10 Feb	CCB Executive Session	Kohler
11-12 Feb	CCB Meeting	Kohler
CAMBRIDGE, MASS.		
10 Feb	PSAC Meeting	Crowley, Patterson
LMSC		
11 Feb	S&M IFWG	[redacted]
11 Feb	Operations IFWG	[redacted] Webb
11-12 Feb	Orientation Briefing to Depot Personnel	WCPO Staff

[redacted]

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Date	Subject	Attendees
WRIGHT-PATTERSON AFB		
12 Feb	Film Test Program Review	[redacted]
AP		
10-11 Feb	Negotiation of AP's AWA's	[redacted] Fitzgerald
12 Feb	CORONA Managers' Meeting	
RCA		
12-13 Feb	DM-4 CDR	[redacted]
PE		
13 Feb	Optical Bar Acceptance/Qual Certification Meeting	[redacted] Kohler, [redacted]
HEADQUARTERS		
9 Feb	DD/S&T Office Chief's Color TF Briefing	Kohler
11 Feb	Bi-Monthly Schedule Review	Staff

[redacted]
PMO/PRS/OSP

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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 -

DD/S&T/OSP/PRS/JWL:llw/x5725 (6 February 1970)

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13 February 1970

MEMORANDUM FOR: Director of Special Projects

SUBJECT : Photo Reconnaissance Systems Report No. 27

I. CORONA

A. Accomplishments

1. Final preparations and checkout of CR-11 were completed. The system was shipped to VAFB on 12 February. Planned launch is 18 February.

2. General King visited A/P on 6 February for a briefing on the possible impact of the recent GAMBIT CUBED failure on future CORONA missions. G.E. analysis concludes that the failure probably resulted from conditions applicable only to the GAMBIT CUBED system and will have no effect on CORONA performance. No modification of existing CORONA recovery equipment is recommended. A copy of the briefing charts were forwarded to Headquarters on 10 February.

3. CR-10 slip problem was corrected by installation of new slit control drive motor. Replacement of a High Efficiency Amplifier corrected the ramp up problem.

4. R -7 Meeting for Mission 1109 was held at VAFB on 11 February. No problems in vehicle, booster, or payload that would indicate a slip in launch date were evident.

5. The Managers' Meeting was held at A/P on 12 February. CR-11 history and readiness status were reviewed. System status, move to Buildings 156 and 152, and proposed configuration management plan were also discussed.

B. Problems

1. No outstanding problems were encountered during this reporting period.

[redacted]

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C. Projected Status

1. CR-11. Flight operations.

2. CR-10. Resolution tests.

3. CR-12. Storage preps.

4. CR-13. Functional tests.

5. QR-2. Subsystem/component testing.

6. CR-14. Receiving/acceptance.

II. HEXAGON

A. General

1. The second Development Model RV arrived at SBAC on 11 February.

2. The Operations IFWG met at SBAC on 12 February. Separate minutes will be promulgated.

3. The DM #4 take-up drastically failed qualification testing. The core broke into two parts during shock tests. The failure appears to be due to a sharp corner in the beryllium part which had a 5 mil. radius instead of the specification requirement of 28 mils.

4. A briefing was presented to the PSAC by the HEXAGON Project Office on 10 February. There was very little discussion of the program by the Committee, with the principal questions being directed towards the decision which was made for active thermal control of the reentry vehicles and the film sticking problems encountered by the sensor. Dr. Land questioned what other solutions had been looked at other than the rather orthodox solution of going directly to active control. Some

of the areas that had been investigated were discussed briefly, including the use of a large capacity buffer to eliminate entirely the camera rewind problem after each operation. Dr. Land indicated that he would like to go into this particular area in more depth at some time in the future. Some concern was expressed by the fact that the present weight exceeds the total booster capability; however, it was pointed out that the present weight includes weights of secondary payloads of about 2,300 pounds with no plan at the present to fly secondary payloads other than P-11, whose weight would be 420 pounds.

5. [redacted] and Dr. McLucas are planning to visit the West Coast SAFSP area on 16 and 17 February and plan to spend approximately two hours at the A/P and some time in Building 156. This coincides with several other activities on the West Coast during the early part of the week which are: R -1 Meeting, scheduled for 17 February at Vandenberg; and the PIM Meeting, scheduled for 17 and 18 February at the A/P and Vandenberg, respectively.

6. A technical directive twx was prepared on 30 January that directed P.E. to proceed with a technical interface that has previously been defined between SSTC's #3 and #4 and the IBM 360/65 computer at 156. This twx has not been released; instead, a verbal agreement between Contracts Branch and Mr. Maguire acknowledges that P.E. will proceed with the interface work and to our agreed upon specification. [redacted] has advised that work is proceeding; however, it is doubtful that a minor modification to SSTC #4 can be completed prior to its delivery if the present ship date is maintained. In any event, SSTC #3 must be retrofitted with this modification in the field.

7. Perkin-Elmer's sequencer utilization plans were presented at the 11 February Schedule Meeting. Perkin-Elmer is planning to use the Development Model sequencer, which has been dormant for two weeks, in the Development Model. Eight ECO's are not in the Development Model sequencer. Six of the eight require hardware changes. The Development Model sequencer will be made compatible with the Development Model by adding a number of supporting boxes to the system. The above, if successful, will relieve the one sequencer/two model problem. Flight hardware will have these changes in the sequencer.

[redacted]

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8. SETS presented their failure mode analysis of the Supply Servo during the week. This study was prompted by recognizing the number of failure modes associated with the system servos which had been pointed out in the P.E. failure mode study. In essence, SETS said that little can be done to reduce the failure modes short of significant servo redesign. They did recommend one operational fix which could be used in the event of a certain failure. SETS identified 63 failure modes in this particular servo, 18 of which they consider as highly probable (1×10^{-4}). No further in-depth analysis at this time will be conducted by SETS on any other system servos.

9. On Thursday, a review of the Wright-Patterson AFB film test program was conducted and was, in general, satisfactory. Wright-Patterson is in better shape than we had realized, primarily because their learning curve is building up very well. The following is a brief summary of their tests:

1) Film storage tests completed.

2) Outgassing constituents test. Only water has been detected so far. Another test will be conducted to confirm this.

3) "Take-up" tests completed.

4) Modulus of elasticity tests completed. The first series was conducted as a function of pressure. Additional tests have been requested to check modulus as a function of temperature and RH.

5) Film weight loss tests - most troublesome to date and are in process. Test matrix was worked up at the meeting.

6) Air bar tests. First series completed but data highly questionable. To be rerun.

New tests on SO-242 color film are requested and will be phased into the test program. Based on these new inputs at the meeting, Mr. [redacted] the WPAFB Project Engineer, is working up revised schedules.

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10. The pressure on the two cores used in P.E.'s Supply Qual test program was finally determined during the week. Pressure on one roll was 360 psi and 530 psi on the other with a 15% inaccuracy tolerance. Pressure should not exceed 550 psi.

11. Eastman Kodak plans to completely respool the "Abbreviated Film Path Roll" in order to provide us with a practically new roll. Samples of this roll will undergo sensitometric tests next week. The Project Office will then decide where to use this roll. If the emulsion is good, it can be used with the P-1 or Development Model backup. If the emulsion is bad (the roll is a year old), we can chop it up into 10,000 feet lengths and send it to RCA. Eastman Kodak is still planning on a 1 March delivery of the second P-1 roll. No problems have been encountered to date.

12. The Project Office officially received P.E.'s new film requirements during the week showing a significant increase, particularly in FY 1971. FY 1970 new requirements can be handled by juggling the currently ordered rolls around and watching the backup requirements closely. About the only requirement that may be difficult to meet is the 140,000 ft. for RCA (need mid-March). Since P.E. has only given us thirty days lead time, we have informed them that this may be tight. However, partial delivery can be sent to RCA, and, if they turn around the shipping container hardware quickly enough, we should be able to keep them supplied such as it will not impact their take-up test program and delivery schedule.

13. The two full 40% RH rolls were delivered to P.E. from the West Coast this week. P.E.'s need date for these rolls is 19 February.

14. Eastman Kodak has advised the Project Office that the UTB version of SO-349 is SO-236. This film does not have the mysterious volatile DMF in it.

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B. Development Model

The Development Model has been reassembled and Side A is now running at low velocity. Side B will be operated following Side A and a diagnostic baseline (MFN 305) will be conducted prior to conducting the EMC test.

C. Flight Article #1

1. It appears that TCA Ready Room "B" tests cannot be completed before 5 March vs a 20 February schedule need. The completed midsection less the TCA should clearly be ready for the TCA at that time. Midsection Ready Room A tests scheduled to start on 5 March cannot start until the TCA has been installed and TCA/midsection interface cables have been checked.

2. TCA tests which must be completed before start of system assembly on 5 March include:

1) Platen (A and B) Acceptance Vibration.
2) Horizontal Baseline in Ready Room "B".
3) TCA Acceptance Vibration and Acoustic.
4) Post-Vibration Baseline Test in Ready Room "B".

III. Administrative

Meetings Requiring Participation of Headquarters Personnel

Date	Subject	Attendees
WCPO		
16-17 Feb	Pre-EMI Meeting	[redacted]
A/P		
17 Feb	CORONA PIM	Patterson, Kohler [redacted] Burks, [redacted]

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Date	Subject	Attendees
VAFB		
17 Feb	R -1 Meeting	
18 Feb	CORONA PIM	Patterson, Burks, Kohler,
18 Feb	CR-11 Launch	Patterson, Burks,
LMSC		
19 Feb	Managers' Meeting	Patterson
P.E.		
18 Feb (tentative)	Metering Capstan Task Force	
E.K.		
20 Feb	Core Winding Pressure Meeting	

PMO/PRS/OSP

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