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HEX-11079-69
Copy 20 of 14
19 December 1969

MEMORANDUM FOR: Director of Special Projects

SUBJECT: Photo Reconnaissance Systems Report No. 19

I. CORONA

A. Accomplishments

1. The REAGIN-31 report on the A bucket of Mission 1108 indicates fair to good photography, though some focus variability was noted in the forward instrument photography. An MIP rating of 105, the third highest in the J-3 series, was assigned. Recovery of the B bucket is scheduled for rev 276 at 1830 EST Sunday, 21 December 1969.

B. Problems

1. Mission 1108 (CR-9) link I failed; therefore, complete temperature data can not be monitored. Link II backup is functioning properly, and diagnostic telemetry indicates that all is well. On rev 223 the DISIC failed after expending about 79% of its total film load. V/H Programmer (pre-launch), link I and DISIC failures are under investigation.

C. Projected Status

1. CR-9 (Mission 1108-2). 11-21 December.
2. CR-10. Pre-chamber preps.
3. CR-11. Blocks preps.
4. CR-12. Day 3 HIVOS through rev 10 and 2 Dr. "A" tests.
5. CR-13. System testing.

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GROUP 1
Excluded from automatic downgrading and declassification

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II. HEXAGON

A. General

1. [redacted] and representatives from SETS and SSC participated in discussions with [redacted] on 17 December regarding those items identified by HTC which are specified in HSSDP and not implemented in the software. The items were placed into categories of relative importance for purposes of negotiating ECP action.

2. The Project Office decided during the week to change the processing chemistry from the modified versamat B to the standard MX 641. The 641 offers better shelf life, is cleaner, will give some increase in gamma, and overall appears to be satisfactory. After P.E. gathers some additional data, a meeting will be held to compare notes, correct the Processing Specification and define processing procedures.

3. Core overpressure winding tests performed at Eastman Kodak have shown that the builder roller force calibration has been erroneous and is suspected to be the culprit in the wide data spread. Windings under two separate conditions are tightening this data spread considerably, but the formal variables in the spooling operations can still be expended to contribute possibly as much as ± 150 psi on the core. Eastman Kodak is planning two additional winding series to develop a more predictable model and will then be in a position to recommend a winding technique which will assure a 95% confidence level of not exceeding P.E.'s 550 psi maximum core pressure. The current schedule for this recommendation is mid-January. The winding techniques will then be qualified by probably two rolls.

4. The two large rolls of 40% RH development model material were delivered to the West Coast via milair this week. The two smaller rolls (38,000 feet and 42,000 feet) of 40% for the development model Chamber "A" tests will be delivered to P.E. on 22 December.

5. Material requirements were reviewed at both Eastman Kodak and Perkin-Elmer during this week to clarify the situation in view of the fluid test schedule.

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6. Bids for fixed price proposals for the following subassemblies for the follow-on effort (Flights 7-12) have been sent to the indicated potential bidders, with responses due by 15 January 1970:

a. All electronic boxes - RadInc, P.E. Aerospace, and AC Electronics.

b. Take-ups - RCA and OTD.

c. Encoders - Litton, Gurley, Boller & Chivens, and Dynamics Research Corporation.

d. Motors 1, 2, 4, 5 and 6 - Macbar, G.E. (Erie, Pa.), Singer, General Precision, and OTD.

e. Motors 1, 3 and 6 - MTI.

f. Pneumatics and Valves - LMSC, Kidde and Hamilton Standard.

g. Optical Bar Tubes - LMSC, Budd, and Republic.

h. Frames - LMSC, Budd, Kaman, and Republic.

OTD, P.E. Aerospace and Boller & Chivens will submit estimated costs vice fixed price costs. The Project Office is directing P.E. to include G.E. (Reentry Systems) and McDonnell in the bidders list for take-ups.

7. RadInc is making every possible effort to deliver all flight hardware by the end of this fiscal year. They are already building and testing modules for flight unit #3. P.E. (McCabe) estimates that total RadInc costs will be in excess of 32 million dollars. RadInc is presently carrying an estimated cost at completion of 30.7 million dollars; however, they are reestimating production contract costs and it will probably result in an increase. In addition, RadInc does not include repair and retrofit costs, which could easily amount to a few thousand dollars. P.E. subcontract department has been budgeted $30.6 million for the RadInc program and $30 million cumulative through this fiscal year. P.E. is considering placing a funding

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limitation of $30 million on RadInc this fiscal year. P.E. placed a limitation of $19 million for fiscal year 1969 as a part of Plan B and subsequently claimed at the negotiations that the funding limitation had increased the RadInc contract by some $4 million. When queried as to the possible impact of a $30 million limitation, RadInc responded that the program delay might well double those costs in excess of $30 million. Therefore, if $30.7 million was the right number for fiscal year 1970 program completion, the limitation would drive the total cost up to $31.4 million. RadInc also indicated they might consider accepting some risk if P.E. would agree to allow RadInc to dispose of excess materials in the event of termination. As of 12 December, RadInc expenditures including fee were approximately $28.4 million.

8. A meeting on AVE and AGE spares during the week resulted in Headquarters approval of the recommended Perkin-Elmer AVE list. The Project Office rightly felt that extra AVE charges for manufacturing conditioning and separate buy activities were incorrect. These costs are being reworked and will be resubmitted. The AGE list worked out as follows:

a.	Electronic Breakout Boxes (PM-X to be submitted with description)	2 Lots (built to STE standards)
b.	Test Data Management System (TDMS)	1
c.	Sensor Subsystem Test Console (SSTC)	5*
d.	Supply Test Station	1**
e.	Take-up Test Station	2
f.	SS Electrical Simulator	1
g.	Take-up Simulator (for MS R&I)	1
h.	Test Data Evaluation Station (Long Light Table)	3
i.	Auxiliary Take-up	2
j.	Film Loading Set	2
k.	Four-RV Test Station	1

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l.	Pneumatics Test Set (Kidde equipment)	1
m.	Format Illuminator	2
n.	Power Bus Simulator	4

* FACI will be held on SSTC #2

** The second SUTS for Danbury may be developed from Factory Test Equipment but shall be functionally equal to the first. The LMSC procured SUTS shall be used at SVIC.

Regarding AGE spares, Perkin-Elmer is preparing a breakout by line item as opposed to the original budgetary submission. These will be addressed when submitted.

9. A review of the SSC acceptance and qual test documentation status is being conducted. Correlation between documentation availability and the actual test schedule is difficult to achieve. This is due partly to the "dynamic" nature of the test schedules and partly to the organization of the test documentation. The effect is the difficulty in acquiring and reviewing the appropriate test plan type information prior to the conduct of the test.

10. Sticking tests at Wright-Patterson Air Force Base during the week to recheck the controversial 60°/80° RH data point indicate faulty equipment. This week's tests were conducted in another chamber under the following conditions - temperature varied slightly from 58° to 60° and the RH from 74% to 82%, but there was no evidence of sticking. Another roll will be run this week to confirm the data.

B. Engineering Model

The chamber was opened Monday, 15 December, to reposition the nonfunctional optical bar, remove the TU (EM-3) and film, and assess the problem in the nonfunctional film path. The rework necessary to begin to identify the problem in the film path was too extensive to allow

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time for a fix. Therefore, the thermal testing is continuing with no further functional testing. The test film has been developed, and the target images appear to have been properly recorded, but the data reduction has not yet proceeded to the point of determining resolution.

C. Development Model

Several minor problems have developed, and the effected items are being repaired in the TCA before it is installed in the midsection. A leak has been found in the twister, and the "B" side is torn down to replace it. The drive capstan on the "A" side is being replaced because of a noisy bearing. Integration of the TCA in the midsection is to begin Sunday.

D. Flight Article

The model is not yet in Ready Room "B" due in part to a cleanliness problem in the ready room. The model should go into the ready room on 19 December. Little AVE progress was made during the week. Three of the four platen "A" light pipes were found to be inoperable. A solid week of rework is now required to clean up the flight model after Ready Room "B" tests. Both platens, both loopers, and the optical bar 4-inch bearings will be replaced.

III. Administrative

Meetings Requiring Participation of Headquarters Personnel

Date	Subject	Attendees
PERKIN-ELMER		
22 Dec (PM)	Consultants Review (Garwin/Shea)	Patterson
23 Dec	Supply Qualification Data Review	

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Date	Subject	Attendees
HEADQUARTERS		
23 Dec	RFP Review	Patterson, [redacted]

[redacted]
PMO/PRS/OSP

Distribution:
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cy 11 - OSP/PRS/File
cy 12 - OSP/PRS/Chrono
cy 13 - [redacted]
cy 14 -

DDS&T/OSP/PRS [redacted] X5725 (19 December 1969)

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