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November 4, 1969

SECOND REPORT OF HEXAGON REVIEW COMMITTEE

Background

At the NRP Executive Committee meeting of June 20, 1969 the HEXAGON Review Committee recommended that:

1. The HEXAGON Project be funded to the minimum level necessary to meet the December 1970 initial launch date.

2. The CORONA launch schedule be revised to provide for

5 launches in FY 1970
5 launches in FY 1971
2 launches in FY 1972.

3. The need for a buy of additional CORONA vehicles be reviewed in December 1969.

These recommendations were accepted.

Statement of the Problem

Although the recommendation was to review the CORONA buy decision in December, I felt that a mid-term review would be very useful. Therefore, I reconvened the same review group* in Los Angeles on October 13 and 14 and in Danbury, Connecticut on October 15 to accomplish the following:

*Dr. F. Robert Naka, DDNRO
[REDACTED] CIA/OSP

Col. Lewis S. Norman, Jr., Vice Director, SAFSP
(when the Committee was set up)



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1. Determine the optimum date to make a final decision on whether or not to procure additional CORONA vehicles.
2. Reassess the validity of the HEXAGON Review Committee's June recommendations to the NRP Executive Committee.
3. Determine the feasibility of providing additional "insurance" to the planned one-year overlap of the CORONA/HEXAGON launches.

Sources of Data

Agendas were prepared and submitted in advance of the Committee's visits to the Director, Program A and to Perkin-Elmer, the sensor subsystem manufacturer. Copies of the agendas are attached. In general, each HEXAGON associate contractor's current and projected schedule status, anticipated reliability (based in part on current failure mode analysis), estimated cost to complete (by fiscal year), and current problem areas were evaluated. The two CORONA Program Offices presented coordinated data on the minimum time from "go-ahead" to "launch" if there were a reorder, the cost (by fiscal year) of additional reorders, the cost savings estimate if CORONAs were not launched during the overlap period, and the impact on reliability of the phasing out of the CORONA Program. Finally, the GAMBIT "HIGHBOY" configuration was presented from the point of view of what changes had to be made to the current GAMBIT design to permit it to operate at a significantly higher altitude and what would be the resultant costs.

Detailed data are on file at the National Reconnaissance Office. (BYE-13479-69, November 4, 1969)

Conclusions

The HEXAGON Review Committee reached the following conclusions:

1. From the standpoint of HEXAGON alone, confidence in achieving mission success naturally rises as time passes. The earliest date prior to launch of passing significant milestones is May 1970. By May 1970 the all-up development model SDV-III will have had an integration test and the

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first sensor subsystem flight article will have been shipped from Perkin-Elmer to Lockheed.

2. From the standpoint of CORONA alone, a decision to buy must occur 24 months prior to launch. The last launch of the 5, 5, 2 schedule is on November 10, 1971. Hence the next launch could be in early February 1972. Therefore, the decision to buy CORONAs must occur about mid-January 1970 to allow for a potential one month slip in the new CORONA buy schedule.

3. Because of the foregoing, the period of December 1969 to February 1970 becomes critical in the HEXAGON schedule. On February 5, 1970 the sensor subsystem development model is scheduled to complete the Chamber A (final) test and be shipped to Lockheed on February 17. Unfortunately, February is marginal for a CORONA buy decision.

4. On December 31, 1969 the electromagnetic interference test will be completed on the development model. This should be the first indication that the sensor subsystem can operate with itself.

5. As a result of the Committee's deliberations, the program offices and the contractors have arranged to accelerate electronic failure mode analysis and test the calculations by interconnecting certain key boxes during December 1969.

6. The results of Items 4 and 5 above are the only milestones one can apply to obtain confidence of HEXAGON mission success. This is somewhat, but not much, better than noting the incremental progress on the schedule.

7. The idea of initiating a CORONA buy with the intent of cancelling in May was examined to see how little cost could be incurred. The notion was, for example, to order Agenas but plan to buy no CORONA-peculiar items and to use the Agenas on GAMBIT. That cost was [REDACTED], hence too high.

8. The GAMBIT "HIGHBOY" concept was reexamined. The cost of a permanent modification to permit GAMBIT to fly from 65 n.m. to 170 n.m. was [REDACTED]. The cost

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of a kit to apply to a particular GAMBIT mission was lower, but the decision to fly such a mission had to be made nine months in advance. Therefore, the dollar cost was too high and the scheduling not compatible.

9. The June 1969 assessment that the probability of successfully meeting the December 1970 launch date within one month (50 percent), within three months (75 percent), and within six months (95 percent) has increased slightly as a result of this Committee's current evaluation.

10. Management attention should be focused on assuring that associate contract interfacing problems do not get out of hand to a point where the objectives of the program are jeopardized. This is not, however, considered a major problem at this time.

Recommendation

As a result of its mid-term study, the Committee recommends that the HEXAGON schedule be reviewed in January 1970 instead of December 1969.

~~*F. Robert Naka*~~

F. Robert Naka
Chairman
HEXAGON Review Committee

Attachments

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