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November 11, 1958

File in file



Mr. R. M. Bissell, Jr.

Dear Dick:

As you have observed in recent technical review meetings at our covert facility, and in special briefings for various reviewing agencies, the Sentry Corona program development is reasonably well on schedule. At this time all major engineering is released and production is well under way. In addition, facilities for checkout and launch operations, together with the detailed operation plans and selection of operation crews, are fairly well established. This somewhat comfortable position was obtained through hard work by all personnel and a large expenditure of premium time during the program's short life. The milestones are recalled as follows:

Cancellation of spin stabilized recon. pod	18 April
Selection of contractors	25 April
Start of Systems Design	28 April
Completion of systems design, first review	14 May
Design freeze	26 July
Major engineering design release	23 Oct.

The present design was selected from a number of possibilities to be the best design obtainable during the period allowed, but with the restriction of employing existing techniques or simple extensions of the state-of-the-art. Your own stated policy of seeking reliability through simple design rather than striving for the last few percentage points in perfection of product has been a major factor in the present design.

Review of the present project indicates that logical consideration for an immediate follow-on should provide the maximum possible period of time for systems analysis and design, engineering design, fabrication, and test. The systems design approach would not be to invent a new system since this would not benefit from the reliability obtained from the current program. Instead such design would be aimed toward product improvement by modification of the present system.

A summary of areas of potential product improvement which require study include:

A. Increased resolution

1. Application of Microfile film, with
2. Increased lens aperture.

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- 3. Improved IMC.
- 4. Improved temperature control of critical camera elements through electrical power dissipation.
- 5. Installation of camera yaw bias to compensate for earths rotation.
- 6. Extending coverage to winter months.

B. Vehicle performance

- 1. Extend life to 2 to 3 days operation and provide for selective firing angles through a detailed weight reduction program.
- 2. Improve vehicle stabilization.
- 3. Reduce telemetry.

C. Recovery operation

- 1. Employ inherently stable retro-system, or
- 2. Employ retro-system autopilot.
- 3. Provide improved tracking accuracy and data smoothing.
- 4. Provide improved reentry timing accuracy.
- 5. Provide precise recovery area wind prediction.
- 6. Provide for land recovery in remote area of southwest USA.

A proposal for Corona II, summarized in Fig. 1, calls for Sixteen Thor boosted recovery-recon. firings during appropriate months of CY 1960. Time spans for systems design, detail engineering, first model manufacturing and equipment qualification are laid out. This schedule, which is considered to represent minimum times for each function, shows that systems study and design should start in December of this year in order to provide you with a detailed analysis report and recommendation for Corona II systems design by March 1, 1959.

Discussion with ITEK along these general lines plus some preliminary planning here at LMSD establishes the scope of the five month study as follows:

- A. Camera studies (at ITEK)
- B. Vehicle studies
- C. Recovery studies

Total

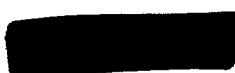


I am looking forward to your visit next week and the opportunity of discussing this matter with you.

Yours truly,



cc:



Present

Corona I

Bio Med

Proposed

Corona II

Systems Study & Design

Detailed Analysis Report

Detail Engineering

Development Model

Manufacturing

Qualification

Delivery Subassy. 1960

Sentry System & Flight



1960

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Flight Schedules

<u>System</u>	<u>Dates</u>	<u>Remarks</u>
CORONA	Each month thru 1960	Increased payload (40#) to start by June 1960 14 total flights 1960
ARGON	July, August, and September 1960	Total of 4 flights
E-1	September and November 1960 and January 1961	Proves E-2 only No results
E-3		No schedule
E-5	August 1961	No additional data

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