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15 January 1965

MEMORANDUM FOR: Chief, Special Projects Staff

SUBJECT: Weekly Status Report No. 17 on Project FULCRUM.

1. Camera System

A. ITEK -- Messrs. Maxey, McMahon, Crowley, and Dirks of the Project Office and Mr. Quick, SEAC representative, attended a program review at Itek on 11 January. Of particular interest were the brassboard status and performance prediction methodology. The Project Office was informed by twix on 13 January that there would be a \$68,000 overrun under the recently negotiated contract.

Messrs. Madden and Morser visited the Project Office on 15 January and discussed various manpower, funding, and reporting problems. They also provided Phase II vacuum chamber pumping requirements predicated on a total of 32 gas rollers per camera system.

B. P. E. -- The progress report for the month of December was received, indicating that the P. E. effort was on schedule and proceeding satisfactorily in all technical areas. Mr. Dirks replied on 15 January to P. E.'s V/H and azimuth *maning* system proposal to the extent that this system would not be required at this time.

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C. STL -- Work is continuing on the two designs selected, one intermittent and one continuous. Mr. Reeves informed Mr. [] unofficially that the film handling contract with STL would underrun to an amount of about \$40,000.

D. RCA -- Work is continuing on the "sheet feed" film drive effort.

2. Spacecraft

Messrs. Hood, Chamberlin, Bryant, Maris, Manley, and Stamm met with Mr. Dirks and [] on 14 January at G. E.'s Washington office (security reasons). The purpose of the meeting was to obtain Project Office approval of the results of certain subsystems studies (drag makeup, attitude control system, and structural/thermal aspects). Before proceeding with further Phase IB efforts, the Marquardt Corporation's bi-propellant engine was selected as best meeting the technical, cost, and schedule criteria. The need for early Phase II award was highlighted because of the 12-month delivery consideration.

The estimated cost to cover the "F-4" STL spacecraft backup study was submitted as \$189,869. In addition to this, three contracts involving vulnerability studies were let -- one at Melabs (\$9,835), one at ESL (\$10,180), and one at Avco (\$6,243). The first two involve ECM equipment; the latter chaff.

Mr. Leon visited Mr. Dirks on 14 January and discussed the following subjects:

- A. Threat Model
- B. Interceptor Sensor
- C. ECM Antennas
- D. ECM Warning to Maneuver
- E. Trajectory Constraints on Maneuvering
- F. Spacecraft Subsystems.

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~~SECRET~~**SUBJECT: Weekly Status Report No. 17 on Project FULCRUM****3. Recovery System**

Avco completed their trade-off analysis of the spool orientation problem.

4. Systems Engineering

The new estimated SEAC costs to cover the original tasks plus the additional task of investigating five of the Titan series missiles amounts to \$475,383.

5. Interface Aspects

On the afternoon of 11 January, Avco representatives presented the results of their spool orientation study at Itek to Mr. Crowley and various Itek personnel. It was agreed that the axis of the spools would remain stationary along the longitudinal axis of the RV and that a 90° film turn employing an air bar, would be made inside the RV. A follow-on meeting was held at Itek on 15 January between Messrs. Batchelder, Pyne, and Harney of Itek and Messrs. Olsson and Cahow of Avco for the purpose of exchanging interface drawings depicting the method of assembly and control of the payload within the RV. It was agreed that Avco would be responsible for the structural design and fabrication of the payload capsule complete with mounting surfaces for Itek components and that interface surfaces would be controlled from a single master jig to be used by both contractors. Access panel requirements were discussed and were generally agreeable.

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