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2 April 1965

MEMORANDUM FOR: Chief of Projects

SUBJECT: Weekly Status Report No. 28 on Project FULCRUM

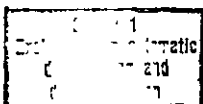
1. Camera System

A. ITEK - Mr. Lilley visited Mr. McDonald at Headquarters on 1 April to discuss final FULCRUM contractual negotiations. The following reports were submitted to Headquarters on 2 April:

- (1) Final Status of Film Steering Breadboard
- (2) Operating Instructions for Filming Steering Breadboard
- (3) Final Summary Report of the Ion Physics' Corona Study.

The first report essentially stated that, since the February Film Steering System Report was published, the steering mechanism was converted for higher speeds using readily available torque motors. Test time after conversion was limited; however, reliable operations were attained at speeds up to 166 inches per second. The Ion Physics' Report was a rather innocuous document, describing the results of an attempt to establish a sound theoretical explanation for the Corona discharge phenomenon, to develop approaches to negate static charge build-up, to minimize the charge generating mechanisms, or to dissipate the charge harmlessly, and to analyze experimentally a model which had been set up so that Corona could be observed. In the latter case, three sets of test apparatus were set up with the following results:

- (1) Corona may be induced in a system when the charge densities of  $5 \times 10^{-10}$  coulombs/sq cm are established on these surfaces.

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(2) Corona existed in the pressure range 60 - 130 microns, although Corona could occur as low as 30 microns.

Messrs. Cohen, Batchelder, Gibson, and the "Brassboard Crew" visited P. E. on 1 April to discuss the structural and thermal aspects of the FULCRUM camera design, in addition to further discussions on the brassboard itself.

B. P. E. - Messrs. Petty and Sommerville (G. E.), Vehrencamp (SEAC), Anderson and Lee (MRI), and Dirks of the Project Office met at P. E. on 30 March to discuss thermal and structural camera problems. Messrs. Shoop, Brindley, and Winiarski (SEAC) and Dirks of the Project Office met at P. E. on 31 March and 1 April to discuss film transport concepts.

A twix was sent to P. E. on 31 March authorizing \$186,000 to cover the April work effort.

C. RCA - Messrs. Dirks, [redacted] and McDonald visited RCA on 29 March to discuss the status of several proposed work statements with a view toward jointly reaching a programmatic approach to the problem. Discussions centered about the "nothing at all" (a crude film transport device), the breadboard (no film velocity modulation), and a reasonably sophisticated brassboard.

Mr. McDonald returned to RCA on 2 April and negotiated the revised work statement at \$340,000. The design, fabrication, and assembly of the breadboard is due for completion by 15 June, to be followed by a demonstration test for Project Office representatives, the results of which are to be submitted in a report due no later than 15 July. The brassboard will be designed, fabricated, and assembled as a full-scale, non-rotating device, which will in every other respect perform like a prototype system except for X-motion across the full scan angle. A test program will be designed to measure the performance of the brassboard, with tests to be conducted at ambient pressure. The brassboard will be assembled and ready for tests on or before 1 November. A final report is due on conclusion of the tests which are scheduled for November and December.

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**2. Spacecraft**

Messrs. Hood and Bryant visited Headquarters on 31 March to discuss the proposed spacecraft work statement for April with [redacted]. The proposed work statement required roughly twice the manpower employed during March, and Mr. Hood was informed that the task list would have to be pared down to be consistent essentially with maintaining the current level of effort, with a possibility for a slight increase in funds because of the technical work being performed for the payload contractor.

[redacted] prepared a memorandum on 1 April on the results of his analysis of the G. E. and G. E. /STL command subsystems. Without considering at this point the SGLS implications, [redacted] recommended that G. E. proceed with its own integrated subsystem development, having investigated the various trade-offs and concluded that the STL programmer offered no significant advantages and in many areas some distinct disadvantages.

[redacted] visited G. E. on 31 March and discussed facility security matters with Mr. Somers of G. E.

**3. Recovery System**

A twix was sent to Avco on 31 March authorizing \$140,000 to cover the April effort of the Project Definition Phase. In addition to continuing their system, configuration, design, and support studies on the single recovery vehicle concept, Avco was tasked to investigate a 2- and 6-bucket system design.

**4. Systems Engineering**

A twix authorizing \$186,000 for SEAC's efforts in April was sent to STL on 31 March. In addition to continuing their normal SEAC functions during April, the systems engineering contractor was specifically tasked to produce a draft version of the System Operational Requirement (SOR) and to devote considerable effort on the preparation of the system specifications and space vehicle specifications documents.

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Messrs. Besserer, Grady, Cianciotto, and Quick visited Lockheed, with Messrs. Maxey and Crowley of the Project Office, on 31 March for a Corona briefing. Dr. DeLauer met with Mr. Maxey on 30 March to discuss programmatic aspects of the FULCRUM project.

**5. Interface Aspects**

There were no formal interface meetings this week, other than the various technical exchange meetings held at P. E. described above.



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