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7 November 1964

MEMORANDUM FOR: Chief, Special Projects Staff

SUBJECT: Weekly Status Report No. 7 on Project FULCRUM

1. Camera System

a. ITEK - A formal briefing on the status and technical aspects of the "Twin 60's" and the 104° camera system was presented on 2 November to Messrs. Maxey, Dirks, Crowley, [redacted], McMahon, and Dr. Scott. Dr. Hill presented the optical fabrication and test aspects of the 603 design. The schedule is an extremely tight one, allowing, in general, only one week for the final testing of each of the optical elements. Because the aspheric in the [redacted] has considerable dioptric power shift of focus with color, the spectral range over which the plate mirror combination can work will be limited. The requirement for a 60 inch focal length f/3 system in the trial fabrication appeared not to be realistic, and it was decided to build a shorter system (about f/2.8, 56 inches focal length). This would demonstrate fabrication capability and provide a device for conducting both interferometric and resolution tests during Phase II operations. The system will be tested with a CW laser at a wave length of about 0.63 microns.

On 5 November Messrs Madden, Morser, and Lilley presented at Mr. Maxey's request the advantages and disadvantages of continuing the so-called 1/3 focal length system. Despite Itek's contention that this system technically was as good as, if not better than, the "Twin 60's", they agreed to cancel further work on this system.

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and to shift those individuals involved on to the "Twin 60's" system. It was agreed that Itek would complete the nearly-done breadboard of the 1/3 focal length system and prepare a final report.

b. P.E. - [] attended a technical discussion session at P.E. on 6 November. Mr. Rosenau presented the decision-making steps which had been taken as of that date. The system parameters derived are as follows:

Focal Length - 72 inches (Vice - 80 inches)

F No. - 4

Film Width (Total) - $8\frac{1}{2}$ inches

System Weight - 1,860 pounds

^{available}
Film Weight - 1,100 pounds (46 inch ^{SPOOL} exposure diameter)

Stereo Coverage - $5.5 \times 10^6 \text{ NM}^2$

Mr. Stoll presented some technical data on some new "zero expansion material", which appears to be considerably better in performance than fused silica. The overall length of the PE camera system will be on the order of 144 inches.

c. STL - A meeting has been scheduled for 9 November at STL.

2. Spacecraft

Proposals are still being evaluated and visits to the competitors' facilities are scheduled for the week of 9 November.

3. Recovery Systems

AVCO and GE submitted their proposals on 2 November, and these proposals are currently being evaluated. Visits to both competitors' facilities are scheduled for the week of 9 November.

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4. Systems Engineering

Work on the launch vehicle specifications is continuing, with a 23 November due date.

5. Interface Aspects

A decision as to the date of the first associate contractor meeting has been postponed until after selection of the SC and RV winners.



Distribution:

- Cy 1 - Addressee, SPS Chrono
- 2 - Mr. Crowley
- 3 -
- 4 - Messrs. McMahon, Scott, Dirks; Chrono
- 5 - DDS&T/Registry
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