

~~TOP SECRET~~

FULCRUM

DEPARTMENT OF THE AIR FORCE
OFFICE OF THE UNDER SECRETARY

MEMORANDUM

January 9, 1965

Gene,

Attached for your information is a summary of characteristics of camera system being studied by Perkin-Elmer as backup to ITEK on FULCRUM. P-E was told by Wheelon to devise a relatively simple system with low risk factors. Wheelon's reasoning was probably that he wanted something he knew would work as compared to the risks involved in the ITEK concept.

The trouble is that the P-E design is in my opinion marginal. The two 7' barrels move horizontally and laterally instead of moving mirrors as we do in other systems. I think the torque forces will cause them more problems than they realize. But the reason they give for this design is that they are concerned about the problems in producing two relatively large mirrors per month. I can't understand Wheelon's reasoning because he knows about other systems design and operation. On the other hand, perhaps he accepted the P-E design as a wedge to insure that the ITEK concept was the most reasonably acceptable.

Please return the attached summary after you have finished with it.

McM

Two 6's waring in the bag -!



HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

~~TOP SECRET~~

610 / of 2
Serial No. BYE 36003-65

~~TOP SECRET~~

Ad No C

FULCRUM

SUMMARY

P-E

HANDLE VIA BYEMAN CONTROL SYSTEM ONLY

6 Jan 1965

| | |
|-----------------------------|---|
| FOCAL LENGTH | 72 INCHES |
| APERTURE | f/4 |
| SPEED (INCLUDING L.E. COAT) | T/6.3 |
| CAMERA WEIGHT | 1860 LBS |
| FILM WEIGHT | 1100 LBS (2-37,000 FT x 8.2 INCH) |
| COVERAGE - STEREO | 5.8 x 10 ⁶ SQ. NAUTICAL MILES |
| - MONO | 11.6 x 10 ⁶ SQ. NAUTICAL MILES |
| PAYLOAD SIZE | 10 FT DIAMETER x 11 FT LONG with COMFORTABLE CLEARANCES |
| EXPOSURE TIME | 1/225 SEC on 4404 FILM for 600 FT LAMBERTS |
| SLIT WIDTH | 0.27 INCHES |
| FILM VELOCITY | 60 IN./SEC at $V/h = 0.04$ RAD./SEC |
| RESOLUTION | 2.5 FT BEST 5.0 FT with REASONABLE MFGR., ASSEMBLY, FOCAL & MOTION TOLERANCES |
| STEREO ANGLE | 30° |
| SCAN RANGE | ± 45° (90° TOTAL) |

Byeman Fulcrum

rel no BYE 36003-65