

~~TOP SECRET~~

February 3, 1965

~~TOP SECRET~~

MEMORANDUM FOR THE SECRETARY OF DEFENSE

SUBJECT: Selection of a New Reconnaissance System

The NRO program for FY 65 and budget for FY 66 carry a total of \$120 million over the two years to initiate development of a new satellite reconnaissance system for general search and surveillance purposes. I believe that an opportunity now exists to undertake a new development that, for the cost essentially of developing one system, will provide the country with a system capable of performing flexibly and effectively both as a general search system and as a quick reaction system for surveillance and inspection of major target areas at high resolution.

The three leading candidates for development differ in detail in their suitability to the several missions that may be of interest. In my judgment, they differ strikingly in the risks that will be involved in achieving reliable operation at their respective development goals. The particular candidate system, FULCRUM, around which the CIA is planning a development program, appears to me to come out unfavorably on both accounts. Your active participation will, I believe, be required to insure that a rational selection is finally made, based on full understanding both of the operational needs and of the technical risks.

On the matter of the need, i.e., the requirements, the Director of Central Intelligence feels, I believe, that, as Chairman of USIB, he is the final arbiter. Present statements of collection requirements as approved by USIB are quite general, and do not identify all of the criteria that may be important. In particular, they do not explicitly recognize the need for quick reaction or for surveillance, inspection, or crisis management. A draft statement now before USIB identifies some of these latter needs but offers little guidance for evaluating their importance relative to the need for general search. There is, therefore, a wide latitude for judgment on these matters.

FULCRUM

REMOVED FROM AUTOMATIC R
EXC. DIR. EP20.10 DOCS NOT A

HANDLE VIA EP20.10
CONTROL SYSTEM ONLY

4 4

1-5

BYE 36078-65

~~TOP SECRET~~

On the technical side, I as DPRO feel it my duty to provide you, as executive agent for the National Reconnaissance Program, with an informed and responsible judgment and with an adequate basis of data on which you can make your own evaluation. The necessary studies and analyses are being carried forward with this goal in mind, aiming toward a decision point in March.

Since the CIA initiated efforts in the spring of 1964, about \$4.5 million of NRO money, and about \$1 million of CIA money, has been spent on design studies and preliminary design of the FULCRUM system, including spacecraft, re-entry capsule, and camera, and for test of some of the critical dynamical characteristics of the proposed FULCRUM camera. Results of the testing will be available by 1 March.

The NRO contracted for broad parametric studies of general search systems in November 1963, and directed these to more specific objectives in August 1964. By 1 March, this work will have resulted in design studies of two candidate cameras, and an analysis for each of its integration with booster, spacecraft, and re-entry system. Approximately \$3.0 million will have been spent on these studies at that time, including that spent at Aerospace Corporation for supporting analyses and technical direction. These studies have not pursued specific detailed design and test to the degree that those on FULCRUM have; only a limited amount of testing will have been accomplished by 1 March.

Along with, and based upon, the contractors' design studies of these two cameras, I plan to provide you with a number of supporting analyses. I hope also to provide similar material on FULCRUM, but this will require the cooperation of the Director of Central Intelligence. The supporting analyses will examine, for each system, at least the following:

The contractor's analysis of resolution, based on his error budget,

The contractor's error budget, and, if appropriate, a re-estimate of resolution,

The contractor's weight budget,

HANDLE VIA BYEMAN
CONTROL SYSTEM ONLY

4 4
2 3

BPE36078-65

~~TOP SECRET~~

Handed via Mission
CONTROL SYSTEM UNIT

4 of 4
3 of 3

BY E 36078-65

Estimates of orbital lifetimes and orbital capabilities based on the chosen booster and the contractor's weight budget, with corrections thereto if required,

The factors bearing on the operating reliability of the camera system,

Mission analyses, based on approved target lists, wherever available, and including estimates of the effects of weather.

I will of course present my recommendations based on these analyses.

We will also initiate the process of estimating costs and defining development schedules, but definitive answers will probably not be available as of 1 March, except perhaps on FULCRIM.

I fully expect that the further analyses will confirm my present judgment that FULCRIM is not the best approach to the search and surveillance problem. Accordingly, I have recommended to Mr. Vance that NRD funding for the work on FULCRIM during February be limited to that required to continue the design and test of the camera. Dr. Fubini concurs. Mr. Vance has taken this recommended position in discussions with the Director and Deputy Director of Central Intelligence.

Funds in the amount of \$670 thousand have been released, verbally, to the CIA in accordance with Mr. Vance's action. This is in contrast to a CIA request for \$1.32 million for February; the \$650 thousand difference is identified by the CIA as that required to keep the contractor's teams together, to continue design work on system, spacecraft, and re-entry vehicle, and for studies of an alternate spacecraft.

Should the matter of continued funding of FULCRIM be brought to your attention, I urge that you support the position we have taken.

Signed

Brockway McMillan

Director

National Reconnaissance Office

cc: DoyScodaf