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15 JUN 1959

MEMORANDUM FOR DR BRUCE BILLINGS, OFFICE OF DEFENSE RESEARCH  
AND ENGINEERING, DEPARTMENT OF DEFENSE


SUBJECT: Mapping Satellite

1. Reference is made to the Ad Hoc Committee Report for the Evaluation of Certain Aspects of Project VEDAS. The basic conclusions and recommendations of the committee reflect the current Air Force position toward the development of a Mapping Satellite and are considered to be essentially in agreement with our memorandum to ARPA dated 23 March 1959. However, certain elements of the report leading to the conclusion and recommendation have been used out of the context of present and projected U.S. Air Force planning. A discussion of these points follows.

2. Any discussion on the ability of providing accurate geodetic control of large areas of land mass is not considered pertinent. The U.S. Air Force in support of the missile offensive force is concerned with the positioning of points within the land masses. Certainly it is desirable to have the ability to position the land masses; however, first priority must be afforded the positioning of specific targets and related points. During the past seven years, a shifting of target systems has occurred; however, the percentages of targets falling within various areas of the Soviet land mass have remained relatively constant.

3. In terms of the impact of geodetic uncertainties on weapon requirements, operational factors must be considered. The employment of both manned aircraft and missiles permits a flexibility which take into account target priorities, ranges, CEPs and geodetic uncertainties. Consequently assignment of missiles to strike targets where the geodetic uncertainties are 1 NM would be made only under the most urgent conditions. Missile target data sheets (MTDS) have been produced on 313 potential missile targets. Eighty percent of these MTDS are accurate to - 1000 feet. In addition eleven percent can be improved to - 1000 with the availability of photography which should be available by 1961. Availability of photography would permit improvement of positioning of the final nine percent to within a half mile. In view of this, under present operational planning estimates of 60 or 100 percent increase in missiles requirements is not an entirely valid conclusion, particularly when it is realized that the available missiles will be employed in consideration of their capability.

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**Memo for Dr. Bruce Billings, Office of Defense Research and Engineering, Department of Defense, subj: Mapping Satellite (Continued)**

4. By 1963 operational missiles will represent a substantial portion of our offensive strike force from a numerical point of view; however, in terms of total destructive power and systems reliability, the major reliance will continue to be vested in the manned aircraft. The flexibility of an integrated force will still be available. Yet from 1963 on, the need for better positioning data to support a growing missile force in the most effective manner becomes more urgent.

5. In regard to the utilization of C material to improve geodetic positioning the utility of any product can be depreciated. The optimum product is desired; however, the Air Force will continue to employ all available information to improve the capability of the strike force. To this end major advances in the utilization of other materials of a related nature have been made and results have been employed in providing improved missile target materials. Project C data will also be exploited to the maximum extent possible. In this connection, Air Force experience with related material leads us to take a less pessimistic view of the possible contribution of C materials than is reflected in the Army Map Service's report.

6. The Air Force concurs in the conclusion that a need for improved geodetic data exists. This need becomes urgent in the 1962-63 period and programs must be developed to insure that improved data becomes available not later than these dates. It is emphasized once more, however, that first priority should be given to the satisfaction of intelligence requirements through the identification of possible new targets associated with the Soviet Nuclear threat.

JAMES H. WALSH  
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ASSISTANT CHIEF OF STAFF,  
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