

Document Title: Percival Brundage, Director, Bureau of the Budget, to the President, "Project Vanguard," April 30, 1957.

Source: Bureau of the Budget Files, Dwight D. Eisenhower Library, Abilene, Kansas.

Project Vanguard was the result of NSC 5520 and was intended to establish "Freedom of Space"--the right to overfly foreign territory for future intelligence satellites. The initial estimate of its cost was \$15-20 million, but by mid-1956 the program was already over budget and estimates of its total costs continued to grow.

In April 1957, the Director of the Bureau of the Budget, Percival Brundage, wrote President Eisenhower explaining the costs of the program and where additional funding had been found. His memorandum provides a good insight into the close relationship between the National Academy of Sciences and the Department of Defense. It also indicates that \$2.5 million for the Scientific Satellite Program came from the Central Intelligence Agency.

Finally, Brundage notes that work on the Air Force reconnaissance satellite was funded for the next fiscal year, and that if the Vanguard satellite was not completed, satellite research would still continue.

[1] APR 30 1957

MEMORANDUM FOR THE PRESIDENT

Subject: Project VANGUARD

The Department of Defense advises that developmental difficulties requiring additional time and effort have resulted in further revision of the estimated total cost of Project VANGUARD and that it will not be possible to complete the presently authorized six vehicle project within the January estimate of \$83.6 million for the total cost. Arrangements have been made to fund approximately \$70 million to date. Of this amount, some \$50 million is being provided by the Department of Defense for the launching vehicles and related activities, of which \$25 million was advanced from the fiscal year 1957 Department of Defense emergency fund and has not been replaced. A fiscal year 1956 supplemental appropriation for the National Science Foundation has provided funds for the satellites themselves and the scientific instrumentation and ground observations.

We have been advised that it is currently estimated that if no further major developmental problems are encountered, the project may be completed within a total of \$110 million. With respect to the probability of success of the project within this level of funding, the Department of Defense has reviewed and reconfirmed its statement to the National Security Council at the meeting of January 24, 1957, that in the technical judgment of Defense scientists and their consultants at least one successful satellite should result from six launchings of the presently planned Project VANGUARD launching vehicle. Since arrangements have been made to fund approximately \$70 million, an additional amount of \$40 million would be required to complete the project on present assumptions.

While no further major technical difficulties are now anticipated, it must be recognized that flight tests have not yet been completed. We have been advised that in the event unforeseeable developments should make it necessary to incorporate fundamental changes in the present approach or to employ an alternative approach, substantial additional funds beyond the \$110 million estimate might be required.

When continuation of the policy established under NSC 5520 considered at the NSC meeting of May 8, 1956, it was decided that this policy should be continued "with the understanding that the program developed thereunder will not be allowed to interfere with the ICBM and IRBM programs but will be given sufficient priority by the Department of Defense in relation to other weapon systems to achieve the objectives of NSC 5520."

The use of Department of Defense emergency funds in late fiscal year 1956 as well as during fiscal year 1957 was necessary because costs of [2] development and procurement of the launching vehicles increased much higher than the original estimate. The Central Intelligence Agency had made \$2.5 million available to the Department of Defense, and the National Science Foundation was able to transfer \$5.8 million when the decision was made to plan for no more than six launchings. It is the position of the Department that use of its funds was not based on any understanding by the Department that it had a continuing responsibility for funding this project but rather that the Department has used its funds thus far because no other clear-cut assignment of responsibility for funding the launching vehicles has been made and because it was assured that funds advanced to this project would be replaced, at least insofar as advances were made from fiscal year 1957 funds.

The Secretary of Defense has now concluded that it is not advisable for the Department to provide further support of the project in fiscal year 1957 or future years from the emergency fund. In addition to the fact that the Department does not consider that it has a continuing responsibility for the project, the Secretary's position is understood to result from the fact that the Department has not been reimbursed for fiscal year 1957 emergency funds already provided as well as from congressional criticism of the use of emergency funds for this purpose. In this connection it is noted that in view of established fiscal policies limiting supplemental appropriations to the most urgent cases, the Bureau of the Budget recently disapproved a request of the Department of Defense to reimburse the emergency fund.

The Bureau of the Budget has reviewed this problem with staff of the Department of Defense and the National Science Foundation. From the evidence at hand, the Bureau of the Budget believes that the project cannot go forward without additional funding. Taking into consideration the fact that this project has all the elements of a guided missile development program together with additional problems of a novel and difficult character, it is not surprising that substantial cost increases have occurred. However, inasmuch as the Department is now well into the project and states that it has already resolved a number of the technical problems, the present estimate of \$110 million may be more reliable than previous estimates.

On the other hand, in the light of past experience with this project and in the absence of flight test results confirming the soundness of the present approach, I believe that it should be recognized that the cost of the project may be as high as \$150 to \$200 million. In weighing the benefits deemed to be derived from the project and its priority in comparison with all the other current projects, it was initially approved in the expectation that the cost would be between \$15 and \$20 million. I question very much whether it would have been authorized, at least on a crash basis, if the actual cost had been known at that time.

[3] It is hoped that in the future more careful estimates will be made as to the total cost or range in possible costs before such projects are initially approved. Furthermore, this seems to offer an opportunity to give up a desirable project for something else which is considered to be of higher priority in relation to cost and benefits to be derived. We are presently developing nine intercontinental and intermediate missiles with a range of over 1,000 miles, some of which involve comparable techniques and which will require difficult priority decisions as to programming and funding. Some

eliminations will have to be made.

The Department of Defense has indicated interest in this program to about the same degree it has shown on some other basic research projects, but has stated that its interest is not sufficient to justify the project's continuance with Department of Defense financing. Therefore, the Department believes that the program must be justified on the basis of the several national objectives stated in NSC 5520 rather than on the Department's interest.

The Department of Defense believes that to prosecute the balance of the program successfully, adequate financing should be arranged by supplemental requests submitted for appropriation to the National Science Foundation, which the Department considers to be the sponsor of the program. The Department would assist in justifying the supplemental requests of the National Science Foundation by assuming the burden of justification as to the technical difficulties encountered and the cost elements involved.

It should be noted that one of the important considerations has been and is the completion of the project during the period of the International Geophysical Year. If you desire the project to be continued in accordance with the existing policy under NSC 5520, it is suggested that the following actions could resolve the current financing problem:

1. The Department of Defense should be directed to provide immediately \$5.8 million from the emergency fund to continue the project from May 1 through approximately August 1. The Department feels it must clear this use of the emergency fund with the Appropriations Committees who have questioned the propriety of its use for this purpose. It should be recognized that the Department would prefer that these funds be replaced.

2. A fiscal year 1958 budget amendment should be submitted requesting an additional \$34.2 million for appropriation to the National Science Foundation to cover costs to completion of the project, assuming that current cost estimates are valid, that no further major difficulties are encountered in the course of completing the development, and that the [4] Department of Defense would continue to provide general support for which no special funding has been considered necessary. Upon availability to the National Science Foundation these funds would be transferred to the Department of the Navy to complete the program.

The National Science Foundation believes that in view of the national interests involved the program cannot be permitted to fail at this stage. If it were the only possible alternative to cancellation of the project, the National Science Foundation would consider it necessary in the total national interest to request a supplemental appropriation to cover the costs required to complete the responsibilities undertaken by the Department of Defense under NSC 5520. Moreover, the National Science Foundation recommends that the Department of Defense provide the necessary funds to complete the project for the following reasons: (1) the Department of Defense is responsible under the present terms of NSC 5520 for the portion of the program requiring additional funds; (2) the Department of Defense is best qualified to justify to the Congress the reasons for present cost increases.

Apparently, both the Department of Defense and the National Science Foundation are very reluctant to continue to finance this project to completion. But each is quite prepared to have the other do so.

General Cutler believes the following considerations are particularly relevant to a decision in this matter:

"1. The substantive scientific information concerning upper atmospheres which might be acquired by the launching of a successful satellite. Included in this information would be data as to the content of the upper atmosphere (such as invisible heavenly bodies) through which the very costly intercontinental ballistic missiles, if perfected, must pass.

"2. The world reaction to an abandonment by the U.S. in midstage of the satellite program. A conclusion that the richest nation in the world could not afford to complete this scientific undertaking would be unfortunate. Even more unfortunate would be an inevitable inference that American scientists were not up to bringing the project to a successful conclusion.

"3. The reaction of the scientific community to the abandonment by the U.S. in mid-stage of the satellite program. A time when the Free World is coming more and more to depend on advanced technology and scientific accomplishment is not a time to alienate the scientific community at home and lead it to believe that the Government has lost faith in scientific accomplishment. [5] From what I hear and read, the scientific community and those in highly technical industry who work with them are already sensitive in this regard.

"4. A final decision on the satellite program should be made by the President on an integrated presentation of the views of all concerned in this matter. The integrated process of presentation, such as is illustrated in the National Security Council, is a primary achievement of this Administration. Where so much, beyond financial considerations alone, is at stake, the President should have the benefit of an integrated presentation and discussion. This point of view is important, irrespective of what the President's decision might ultimately be."

It should be noted that the Air Force has already started its own project for a much larger reconnaissance satellite vehicle and is spending approximately \$10 million in fiscal year 1957 and is currently planning additional funding of at least \$10 million for fiscal year 1958. Therefore, whether or not the International Geophysical Year satellite project is completed, research in this area will not be dropped.

/signed/

Percival Brundage

Director

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