DOCUMENT 5

Title: James R. Killian, Jr., Special Assistant for Science and Technology; Percival Brundage, Director, Bureau of the Budget; and Nelson A. Rockefeller, Chairman, President's Advisory Committee on Government Organization, Memorandum for the President, "Organization for Civil Space Programs," March 5, 1958, with attached: "Summary of Advantages and Disadvantages of Alternative Organizational Arrangements."

Source: Dwight D. Eisenhower Papers, Eisenhower Library, Abilene, Kansas.

As the three preceding documents have shown, there was substantial attention given within the Executive Office of the President during the December 1957–March 1958 period on how best to organize the nation's space effort. This memorandum was the culmination of that attention and laid the basis for President Eisenhower's decision to create a new civilian space agency.

EXECUTIVE OFFICE OF THE PRESIDENT PRESIDENT'S ADVISORY COMMITTEE ON GOVERNMENT ORGANIZATION wathington 26, D. C. March 5, 1958

MEMORANDUM FOR THE PRESIDENT

ġ

SUBJECT: Organization for Civil Space Programs

The Problem

As you know, there will soon be presented for your consideration civil space programs for the United States which will entail increased expenditures and the employment of important numbers of scientists, engineers and technicians, $\frac{1}{2}$

This Committee, in conjunction with the Director of the Bureau of the Budget and your Special Assistant for Science and Technology, have given consideration to the manner in which the executive branch should be organized to conduct the new program. This memorandum contains our joint findings and recommendations. The memorandum (1) discusses some of the factors which should be taken into account in establishing the government's organization for these civil space programs, (2) recommends a pattern of organization, and (3) indicates certain interim actions which will be necessary. Also attached is a summary of the advantages and disadvantages of certain alternative organizational arrangements.

1/ These programs do not include those projects relating in space vehicles and exploration which will be carried out in the Department of Defense under the direction of the Advanced Research Projects Agency (ARPA).

- 2 -

Discussions to date suggest that an aggressive space program will produce important civilian gains in the form of advances in general scientific knowledge and the protection of the international prestige of the United States. These benefits will be in addition to such military uses of outer space as may prove feasible.

Establishing a Long Term Organization

Because of the importance of the civil interest in space exploration, the long term organisation for Federal programs in this area should be under civilian control. Such civilian domination is also suggested by public and foreign relations considerations. However, civilian control does not envisage taking out from military control projects relating to missiles, anti-missile defense, reconnaissance satellites, military communications, and other space technology relating to weapons systems or direct military requirements. - 3 -

We have considered a number of different approaches to civil space organisation. It is our conclusion that one of these alternatives provides a workshie solution to the problem. The other principal alternatives have serious shortcomings which argue against their selection as a basis for space organization.

Recommendation No. 1. We recommend that leader shipsed the civil space effort be lodged in a strengthened and redesignated National Advisory Committee for Aeronautics.

The National Advisory Committee for Aeronautics (NACA), in a resolution adopted on January 16, 1958, has proposed that the national space program be implemented by the cooperative effort of the Department of Defense, the NACA, the National Academy of Sciences and the National Science Foundation, together with the universities, research institutions, and industrial companies of the nation. NACA further recommanded that the development of space vehicles and the operations required for scientific research in space phenomena and space technology be conducted by the NACA when within its capabilities. NACA is now formulating a program which is expected to propose expansion of existing programs and the addition of supplementary research facilities.

- 4 -

Factors Favoring NACA as the Principal Civil Space Agency

NACA is a going Federal research agoncy with a large scientific and engineering staff (approximately 2,000 of its 7,500 employees are in these categories) and a large plant (\$300,000,000 in laboratories and test facilities).
It can expand its research program and increase its emphasis on space matters with a minimum of delay and can provide a functioning institutional setting for this activity.

2. NACA's acronautical research has been progressively involving it in technical problems associated with space flight and its current facilities construction program is designed to be useful in space research. It has done research in rocket engines (including advanced chemical propellants), it has developed materials and designs to withstand the thermal effects of high speeds in or on entering the earth's atmosphere, it conducts multi-stage rocket launchings, and in the X-15 project it has taken the leadership (in cooperation with the Navy and Air Force) in developing a menned vehicle capable of flights beyond the earth's atmosphere. - 5 -

3. If NACA is not given the leading responsibility for the civil space program, its future research role will be limited to aircraft and missiles. Some of its present activities would have to be curtailed, and the logical paths of progress in much of its current work would be closed. It would, under such circumstances, be difficult for NACA to attract and retain the most imaginative and competent scientific and engineering personnel, and all aspects of its mission could suffer. Moreover, it is questionable whether it would be possible to define practicable boundaries between the missile and high performance aircraft research now performed by NACA and the space wehicle projects.

4. NAGA has a long history of close and cordial cooperation with the military departments. This cooperation has taken place under a variety of arrangements, usually with little in the way of formalized agreements. Although new relationship problems are bound to arise from an augmented NACA role in space programs, the tradition of comity and civil-military accommodation which has been built up over the years will be a great asset in minimizing friction between the civilian space agency and the Department of Defense.

- 6 -

5. Although much of its work has been done for the military departments, NACA is a civilian agency and is widely recognized as such. A civilian setting for space programs is desirable, and NACA setisfies this requirement.

6. Some of the principal problems in using NACA, as listed below, can be overcome by relatively limited amendments to existing law and by appropriate administrative action. These measures are described in later paragraphs.

Problems in Using NACA as the Agency with Primary Responsibility for Civil Space Programs

 NAGA has in the past been concerned chiefly with research involving air breathing aircraft and missiles.
NAGA's competence in certain fields related to space flight (such as electronics and space medicine) will need to be augmented. NAGA has also had little experience in the direct administration of large scale developmental contracts.
Many of the scientists who have done the most work on rocket engines and space vehicles are now employed by Defense Department egencies and by private contractors of the military services. Some means of utilizing such experienced personnel will have to be found which does not unduly impair the capacity of the Department of Defense to continue defense related aspects of missile and space activity. - 7 -

3. The NACA is not in a position to push ahead with the immediate demonstration projects which may be necessary to protect the nation's world prestige. Therefore the military services may have to be relied on for such demonstrations while NACA is equipping itself for the full performance of the space job.

4. NACA suffers from some of the limitations imposed on civil service agencies, and some scientists are known to favor reliance on private research organizations operating under government contracts. Ceilings and numerical restrictions on the salaries of top scientific staff and the general lag in Classification Act salaries areamong the obstacles to administration through government laboratories which pose problems in utilizing NACA.

5. NACA now spends around \$100,000,000 per year. A civil space program may eventually entail additional annual expenditures substantially in excess of this amount. It is obvious that important changes in NACA will be required by such an expansion, and the agency may have some difficulty in assimilating the additional staff and functions.

- 8 -

Recommendation No. 2. We recommend that NACA's basic law be amended to give NACA the authority and flexibility to overcome or mitigate the problems noted above so that NACA can carry out its total program effectively.

Specifically the amendments should;

a. Rename the NACA the National Aeronautical and Space Agency to get away from the limited connotations of the term "aeronautics" when used alone and to recognize that NACA has long since ceased to be an "advisory committee" as the term is customarily used.

b. Retain a board for top policy direction. Some changes

c. Provide for the appointment of a Director by the President by and with the advice and consent of the Senate.

d. Provide a system for the fixing of compensation of employees which, under appropriate Presidential controls, will permit the agency to pay rates which are reasonably competitive with the rates paid by non-Federal employers for comparable work. (This amendment will ease the salary limitations under the Classification Act of 1949 which have caused so much concern in and out of NACA.) - 9 -

Certain additional miscellaneous powers may also have to be given NACA if further investigation reveals that they are not already available and confirms that they will be of material assistance to the agency.

The above powers would give NACA as much flexibility as can reasonably be achieved by contract laboratories and would at the same time permit retention of the traditional NACA practice of conducting such research and testing through its own government employee staffed facilities as it determines to be desirable in carrying out a space program.

There will remain the need to refine relationships with the Department of Defense in space matters and to draw upon and utilize staff and experience now lodged in the laboratories of the military services and their contractors, but the reorganized NACA would be equipped to work out these problems in a flexible manner. Some Presidential intervention may prove necessary to bring about or implement agreements between the space agency and Defense, and it may also be desirable for the President to be given the specific authority to transfer to NACA space activities directly related to the civil program which are now being performed by other agencies.

- 10 -

Overlapping between NACA's civil space program and the work of Defense on military projects should be kept to a minimum. This can be done if Defense, in a manner analogous to the practice followed on developing aircraft and missiles, makes appropriate use of NACA for supporting research and development on military space vehicles. An arrangement of this kind could reduce deplication without undermining the basic Defense Department responsibility for developing weapone systems and other military equipment.

Interim Measures



Recommendation No. 3. If you approve our recommended approach to space organisation, we further recommend that e number of interim and short-term measures be given immediate attention.

Specifically, we propose:

a. An all-out attempt should be made to draft needed legislation within the next few weeks so that there will be some chance of final action during the current session of the Congress. At the same time decisions should be made with respect to the supplemental appropriations which will be required for NAGA to get its part of the space program under way. If congressional action - 11 -

can be secured on both matters before adjournment, the full civil space program under arrangements designed to serve long term needs can be launched this year.

If it proves impossible to obtain the enactment of the comprehensive legislation strengthening NACA during the current session, the passage of the general Classification Act revisions now pending, the anthorization of additional super-grade and Public Law 313 positions, and the securing of supplemental appropriations would still enable NACA to get under way with a space program.

b. While ewaiting congressional action we suggest that the President advise the NACA's top committee that it is being charged with the responsibility for developing and arranging for the execution of the civil space program. NACA will at first have to rely heavily upon the Department of Defense and its instrumentalities for interim development and demonstration projects. However, the problems created by such arrangements will be minimized once the President gives NACA the clear-cut authority required for it to select and monitor the advanced space projects entrusted to the Department of Defense during the transitional period.

- 12 -

c. None of the immediate measures is more essential and fundamental than defining as clearly as possible just what the nation plans to do in the space field. At the same time an effort must be made to estimate with reasonable exactness the annual additional costs of the civil space program.

Immediate Action

If you concur in the recommendations set forth above, the Director of the Bureau of the Budget will proceed, in cooperation with this Committee, your Special Assistant for Science and Technology and other departments and agencies concerned, to develop for your consideration specific proposals for legislative and executive action.

ames R. Killian.

Special Assistant for Science and Technology

Percival Brundage Director, Bureau of the Budget

Nelson A. Rockefeller, Chairman

Attachment

Summary of Advantages and Disadvantages of Alternative Organizational Arrangements

1. Use of a private contractor to carry out the civil space program under supervision of NACA.

A variation of our recommended organizational approach is to select NACA as the civilian agency to supervise contracts with a private laboratory charged with developing and testing space vehicles. This is the pattern followed by the Atomic Energy Commission in much of its research. This approach has also been used to some extent by the military services in developing missiles.

Advantages

Contract operation is preferred by some scientific personnel as a means of circumventing government salary and administrative controls. It would retain NACA in a supervisory capacity while making use of selected private research organizations.

Disadvantages

This approach is in conflict with the traditional NACA practice of carrying out research largely through its own government-employee staffed laboratories; there is no assurance that a private research laboratory can be found to do the work on a sufficiently urgent schedule; and such greater flexibility as private laboratories may enjoy can also be provided NACA through the changes in law previously described.

- 2 -

Conclusion

No real gains would flow from this alternative which could not be achieved under the preferred organization. It would be better to permit NACA to make its own decisions as to the extent to which it would use contracting authority in executing the space research program. It is assumed, of course, that NACA will, in fact, make fairly extensive use of research contracts, but on a selective basis.

2. Utilization of the Department of Defense

The recent Supplemental Military Construction Authorization Act authorizes the Secretary of Defense, for a period of one year, to carry on such space projects as may be designated by the President. It confers permanent authority for the Secretary or his designee to proceed with missile and other space projects directly related to weapons systems and military requirements.

Advantages

The Department of Defense is now doing most of the current missile and satellite work; it has the bulk of the scientists and engineers active in these fields in its employ or on the rolls of its contractors; it will have to continue work on space vehicles on an interim basis for demonstration purposes; it is experienced in working with and utilizing the facilities of NACA; and it may be possible for a civilian agency of the Department to carry out the program.

- 3 -

Disadvantages

The Department of Defense is a military agency in law and in the syse of the world and placing the space program under it would be interpreted as emphasizing military goals; the space program is expected to produce benefits largely unrelated to the central mission of the Department of Defense; there is some danger that the non-military phases of space activity would be neglected; the Department is already so overloaded with its contral military responsibilities that care should be taken to avoid charging it with additional civil functions; cooperation with other nations in international civil space matters could be made more difficult; and adequate civil-military cooperation can be achieved under the recommended organization without assigning inappropriate functions to Defense.

Conclusion

Since the space program has a relatively limited military significance, at least for the foreseeable future, and since the general scientific objectives should not be subordinated to military priorities, it is essential that the arrangements for space organization provide for leadership by a civilian agency.

- 4 -

3. Utilization of the Atomic Energy Commission

There are now pending before the Congress bills which would authorize the Atomic Energy Commission to proceed with the development of vehicles for the exploration of outer space. Among these bills are S. 3117 (introduced by Senator Anderson) and S. 3000 (introduced by Senator Gore). The justification for these proposals is the role already being played by the Atomic Energy Commission in developing nuclear propalied jet and rocket engines.

Advantages

The Atomic Energy Commission is a civilian agency with competence in directing scientific research and development projects; it has had experience in managing research contracts and in working with the military agencies; and it is now charged with developing a nuclear rocket engine which may eventually be used to propel space vahicles.

Disadvantages

The Atomic Energy Commission is concerned chiefly with the use of a single form of energy and it is expected that chemical propellants, not atomic energy, will be the chief power source for space vehicles for years to come. Moreover, the Commission has virtually no experience or competence in most aspects of the design, construction and testing of space vehicles.

Conclusion

The Atomic Energy Commission has a contribution to make in the space field. However, it should limit its work to the aspects of the space problem in which nuclear energy may have practical applications. An administration position along these lines has already been conveyed to the Chairman of the Atomic Energy Commission.

4. Creation of a Department of Science and Technology

Senators Humphrey, McClellan and Yarborough recently introduce S. 3126, a bill to create a Department of Science and Technology. The bill calls for the establishment of a new executive department which at the outset would contain or be given the functions of the National Science Foundation, the Patent Office, the Office of Technical Services of the Department of Commerce, the National Bureau of Standards, the Atomic Energy Commission and certain divisions of the Smithsonian Institution. The Secretary would also be authorized to establish institutes for basic research.

Advantages

The proposed department would provide a civilian setting for the administration of space programs, and it would give this and other scientific activities the prestige and accessibility to the President associated with departmental status.

Disadvantages

The proposed department will be highly controversial, and there is no assurance that it can be established in time to assume the responsibility for civil space programs. It is also unlikely that science, of itself, will provide a sound basis for organizing an executive department.

Conclusion

There would be little prospect of getting such a reorganization approved and functioning in the near future. Even if the department could be created, it might not provide as good a setting for a high priority space program as that proposed under the preferred organization.

AIRIE