

THE WHITE HOUSE

WASHINGTON

MEMORANDUM FOR: THE PRESIDENT

FROM: Roy L. Ash

Subject: 1976 Budget decisions: National Aeronautics and  
Space Administration

The agency request and my recommendations with respect to 1976 budget amounts for the National Aeronautics and Space Administration are presented in the tabulation attached (Tab A).

Three key issues have been identified for your consideration (Detail at Tab B).

I. Space shuttle and manned space flight alternatives

NASA is requesting \$1,251 million in FY 1976 for development of the space shuttle--\$451 million above the 1975 level as part of the orderly build up of the program toward a 1979 first launch. Dr. Fletcher is, however, willing to accept \$45 million less in 1976, which can be accommodated by accepting some higher degree of risk in the program.

The key question for FY 1976 is not just additional funds for the shuttle, but whether the U.S. should continue its manned space flight program, with the shuttle as its key element. In the issue paper attached, OMB recommends on balance that the manned space flight program should be continued and that the shuttle is the only feasible approach at this time. Assuming that the shuttle were to continue, OMB would recommend a \$396 million increase for the program--\$10 million below NASA's minimum request. This last \$10 million reduction does not represent a programmatic recommendation but rather a final step in reaching the OMB planning ceiling, as discussed in section three of this memo.

Decision: Approve agency recommendation  
Approve OMB recommendation  
See me

*RAF*  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Photocopy from Gerald R. Ford Library

II. Earth resources survey satellite

NASA has requested \$14 million (in BA) in 1976 to initiate a third Earth Resources Technology Satellite (ERTS-C) in FY 1976. The project would cost \$50 million and would be launched in September 1977 to follow directly on the ERTS-B satellite scheduled for launch in January 1975.

OMB believes that the initiation of ERTS-C should be deferred for consideration at least a year because of overall budget stringency; because we do not accept NASA's position that data continuity is required in order to carry out an experimental earth resources program; and because we need additional time to assess the real contribution of NASA's earth resources program compared with other technologies and user needs.

Decision: Agree             
Disagree             
See me           

III. Total NASA allowance

NASA has taken the position that, aside from ERTS-C, the overall level of the OMB recommendation is insufficient to allow the agency flexibility to carry out its approved programs.

OMB recognizes that the its recommendations for NASA in FY 1976 are tight and that NASA's programs have been significantly reduced in previous years—thus removing much of the agency's ability to accomplish a general belt-tightening. Never-the-less, we believe that the ceiling amounts provided to NASA as the basis for formulating its FY 1976 budget proposal, represent a balancing of the overall priorities of the NASA program against the need for fiscal stringency.

The OMB recommendation for NASA would allow a net increase of \$227 million in BA and \$237 million in outlays above the FY 1975 level to cover in part the effects of inflation and the increased requirements for the space shuttle - offset by selected minor reductions in a variety of other activities, not significantly affecting major programs. Current differences between the OMB and NASA positions are \$87 million in BA and \$58 million in outlays which represent, respectively, 2.5 percent and 1.7 percent of NASA's recommended budget. The estimated employment, impact of these differences is a loss of approximately 3,000 contractor jobs spread throughout the country.

Decision: Agree             
Disagree             
See me           

Attachments

11/29/74

Issue Paper  
National Aeronautics and Space Administration

Space Shuttle and Alternatives  
in the U.S. Manned Space  
Flight Program

Statement of the Issue

o Should the U.S. manned space flight program be continued on its present course (including development of the space shuttle), be redirected, or be cancelled?

Background

o The space shuttle program was approved by President Nixon in January 1972 and is currently the key developmental objective of the U.S. civilian space program. Current plans are for the shuttle to be operational in the early 1980's.

o The total development cost of the space shuttle is estimated to be \$6 billion in FY 1975 dollars, of which about \$900 million has been spent to date.

o OMB believes that the space shuttle program, and the broader question of continuing the U.S. manned space flight program, should be reconsidered in the FY 1976 budget for the following reasons:

- Cancelling the shuttle (and all manned space flight activities) could potentially result in relatively large near-term savings in the Federal budget (on the order of \$1.0 - 1.5 billion/yr.). Funding requirements for the shuttle will be large (i.e., \$1.2 billion/yr.) in the next several years and will require increases in NASA's budget.
- Reconsideration of the space shuttle decision offers the Administration an opportunity to visibly reorder national priorities.
- The value to the nation of continuing a U.S. manned space flight program is a fair question. No urgent civilian or military requirements have been identified for the space shuttle.

o In reviewing NASA's FY 1976 budget, OMB requested NASA to develop a position paper on the space shuttle and manned space flight alternatives. (The classified NASA response is attached at Tab C.) The major points are summarized below:

Why continue manned space flight?

o NASA and other supporters, argue the following case:

- That the long-term political and international position of the United States requires us to at least keep abreast of the Soviets in terms of manned capabilities in space.
- That manned space flight is an integral part of the overall U.S. efforts in space and provides additional and unique capabilities over those possible with unmanned satellites.
- That manned space flight provides a basis for national pride and a medium for international competition and cooperation.

Why develop the space shuttle?

o NASA argues:

- That the shuttle provides for a continuing U.S. manned space program that is both cheaper than other manned alternatives and is forward-looking in advancing space technology.
- That the shuttle will provide a means for cheaper and more effective utilization of space for a wide variety of potential applications
- That the shuttle will provide new capabilities for scientific and civilian applications as well as for national defense purposes.

Alternatives

1. - Continue NASA's current plans for developing the space shuttle, with initial operations in the early 1980's.
2. - Cancel the space shuttle and discontinue all U.S. manned space flights after the Apollo-Soyuz docking mission is completed in July 1975.
3. - Cancel the space shuttle, but seek to develop a less ambitious and lower cost means for continuing manned space flight.

Analysis

This table provides OMB estimates of the total cost of the civilian space program for the three alternatives:

	(Outlays in millions of constant FY 1976 dollars)					
	<u>FY 75</u>	<u>FY 76</u>	<u>FY 77</u>	<u>FY 78</u>	<u>FY 79</u>	<u>FY 80</u>
Alternative 1	3,186	3,425	3,600	3,500	3,300	3,100
Alternative 2	3,088	2,190	2,000	2,000	2,100	2,300
Alternative 3	3,094	2,715	2,900	3,000	3,100	3,200
Potential Savings (2-1)	-98	-1,235	-1,600	-1,500	-1,200	-800

- o The benefits of the manned space flight program are largely intangible, involving, for example, maintaining both the appearance and the fact of international technological parity (particularly with respect to the Soviet Union).
- o Although future plans call for DOD missions to be flown on the space shuttle, there are at present no military missions that would require the unique capabilities of the shuttle.
- o There are different views within DOD whether or not the shuttle will be a cost-effective means for accomplishing DOD missions. While DOD has agreed to participate in the space shuttle program defense has deferred any commitment of major funds for shuttle hardware or facilities for several years.
- o Whether at some future time the U.S. might be required to react to Soviet manned activities in space (i.e., some presently undefined reoccurrence of the Sputnik episode) is problematical, as is the possibility that some future military mission might develop which could use the unique capabilities of the space shuttle.
- o The economic arguments presented in support of the shuttle are not entirely convincing because they assume a very high level of future space activity and a cost performance for the space shuttle which may prove technically difficult to achieve.
- o Despite these concerns related to NASA's current program planning assumptions, OMB can identify no clearly-preferable alternatives.
- o Cancelling manned space flight would be difficult:
  - Would require a major resizing of NASA as an agency, including closing several major facilities (there are now 10 major NASA centers);
  - Would have a substantial impact on employment of technical personnel (now totaling more than 30,000 industrial contractor employees plus about 10,000 civil servants and 15,000 support contractor employees at the three NASA manned space flight centers).
  - Could have international implications for U.S./Soviet relations and for U.S. joint cooperative programs with the Europeans, who have committed \$400 million to the development of a Spacelab which will be flown in conjunction with the shuttle.
- o Cancelling space shuttle without cancelling all U.S. manned space flight programs is a possibility but:
  - The options are not well-defined and may have the disadvantage of being a step backward technically;

- Some costs would have to be incurred to cancel the shuttle, and in this option the manned space flight centers would be maintained until a new program was initiated; and
  - The potential cost savings of non-shuttle options may be relatively small compared with continuing the shuttle.
- o Delaying the space shuttle is also possible but:
- A major delay would not save much in the short term, because we are too far into the program; and
  - Would add to the long-term cost of the program.

Recommendation

Our general recommendation is to continue with the development of the space shuttle, but to avoid making any firm commitments to a specific completion date that might be construed as providing a sense of urgency of high budgetary priority to the development of the shuttle.

We believe that if a decision is taken to continue the shuttle program, the funding should not be driven by an arbitrarily-defined completion date. If major technical problems arise consideration should be given to slipping the schedule rather than increasing costs to hold to a given completion date. There is no urgency to having the shuttle operational at any specific time.

At the same time, we also believe that shuttle funding should not continue to be arbitrarily raised or lowered to meet changes in economic conditions or in the budget climate, because of the potential impact of such changes on NASA's ability to effectively manage the program.

11/29/74

Issue Paper  
National Aeronautics and Space Administration

Earth Resources Survey Satellite

Statement of the Issue

- o Should initiation of a third Earth Resources Technology Satellite (ERTS-C) be approved in the FY 1976 budget.

Background

- o NASA's first Earth Resources Technology Satellite (ERTS-A) was launched in July 1972 and has completed more than two years of successful operations.
- o The second (ERTS-B) is scheduled for launch in January 1975 to continue experimentation, to provide additional data for current users and to allow for the implementation of several demonstration projects.
- o NASA is requesting \$11 M (outlays) in the FY 1976 budget for a third satellite (ERTS-C) to be launched in September 1977, when ERTS-B is expected to fail. Total cost of ERTS-C including launch vehicle, is about \$50 million.
- o During the past year substantive committees in both the House and Senate have urged the Administration to initiate ERTS-C as early as possible, principally to minimize any hiatus in data from ERTS satellites.
- o OMB has testified before the same congressional committees that a data gap would not be serious because large volumes of data will be available from ERTS-A&B--and that in an experimental program such as ERTS, scarce resources are better utilized in advancing technology rather than in guaranteeing data continuity. Although some limited commercial use is being made of ERTS data, Federal agencies do not generally argue for continuity of data (beyond ERTS-B).

Analysis

Total funding for NASA's Earth Resources Program, including ERTS satellites (in millions of dollars) is as follows:

	<u>FY 1975</u>		<u>FY 1976</u>	
	<u>BA</u>	<u>Outlays</u>	<u>BA</u>	<u>Outlays</u>
NASA Request	61	60	62	66
OMB Recommendation	56	57	51	57
Differences	-5	-3	-11	-9
Related Launch Vehicle Savings	--	--	-3	-2

o As indicated in table above, NASA (in addition to development of ERTS satellites) is conducting a large supporting R&D program on advanced, higher performance sensors, techniques for analysis and handling of data generated by these satellites, and experiments for demonstrating applications of the technology.

NASA Recommendation: The agency strongly urges that ERTS-C be initiated in FY 1976 on the grounds:

- That improved instrumentation to be flown on ERTS-C represents a significant advancement in the state of remote-sensing technology.
- That continuity of ERTS data, is an essential aspect of developing and sustaining interest among potential users.

OMB Recommendations: OMB believes that there are major uncertainties about the potential for ERTS technology (as opposed to other alternatives) and that consideration of ERTS-C can be deferred at least a year, particularly in view of the overall budget stringency. The specific OMB position is:

- That the NASA remote-sensing program is an experimental one, and that continuity of data is not essential to demonstrating the potential of ERTS technology.
- That a convincing case has not been made that users would be adversely affected by a hiatus in ERTS data availability
- That by accepting ERTS-C in the FY 1976 budget, we would be recognizing de facto the need for data continuity and therefore set the stage for additional larger and more expensive (\$150 million) follow-on satellites in FY 1977 and subsequent years.
- This could lock us in prematurely to an operational earth resources satellite system before an adequate opportunity is provided to examine the full needs of such a system and the alternatives which are available.

Issue Paper  
National Aeronautics and Space Administration  
Total NASA Allowance

Statement of the Issue

° Aside from issue on ERTS-C, should NASA's total FY 1976 allowance be held to the OMB planning ceiling level despite the NASA Administrator's view that the OMB ceiling is overly-restrictive to meet his program commitments?

Background

° Dr. Fletcher has maintained consistently throughout consideration of his 1976 budget that the OMB planning ceiling set last July for NASA is overly-restrictive in view of:

- The rapidly increasing requirements of the space shuttle and much higher than anticipated wage/price escalation in the aerospace industry, affecting shuttle and other programs.
- OMB planning guidance formally worked out between NASA and OMB last winter under which OMB agreed to recognize, and attempt to provide relief for, future-year inflation in major NASA projects.

° Dr. Fletcher's view is that OMB has not honored this general agreement in establishing the tight FY 1976 planning ceiling for NASA, and in now recommending that NASA be held to the planning ceiling.

° NASA's FY 1976 budget submission for 1976 recognizes the need for a constrained total Federal budget and therefore Dr. Fletcher, under his minimum budget proposal has:

- Held down increasing BA and outlay requirements for the space shuttle by \$45 million (without slipping the schedule).
- Deferred all new major projects proposed for initiation in 1976.

° These NASA actions still leave the NASA budget over ceiling by \$97 million in BA and \$70 million in outlays.

° Dr. Fletcher takes the position that if it were necessary to meet the OMB planning ceilings for NASA:

- A major approved scientific flight project, Pioneer-Venus orbiter and probes, would have to be cancelled, or
- The space shuttle schedule would have to be further slipped, and
- If either action were required he would want to discuss the implications with the President.

Photocopy from Gerald R. Ford Library

° OMB has been generally skeptical of the position that the approach suggested by NASA is the only way to meet the OMB planning ceiling; instead OMB recommends an alternative solution which neither cancels Pioneer-Venus nor slips the shuttle, but rather makes selective reductions not significantly affecting major programs.

Analysis

° The current situation is as follows:

	<u>BA</u>	<u>Outlays</u>
NASA Recommended Budget	3,639	3,550
Less Reductions identified by NASA	-95	-50
Less OMB Reductions Accepted by NASA	<u>-19</u>	<u>-14</u>
NASA Current Position	3,525	3,481
OMB Recommendations	<u>3,438</u>	<u>3,423</u>
Differences	+87	+58

NASA Recommendation: With the exception of two OMB reductions (i.e., construction of facilities and NASA support contractor manpower), NASA states that no further reductions below its minimum budget case would be acceptable. NASA argues that:

- The planning ceiling was set too low and that OMB recommendations for meeting the ceiling are arbitrary and harmful to the NASA program.
- The NASA budget has been squeezed year after year and no flexibility remains in the budget.
- Accepting the OMB recommendations would reduce NASA-related employment by about 3,000 jobs nation-wide.

OMB Recommendation: OMB recognizes that NASA was given a tight planning ceiling, but that:

- NASA's ceiling represents a fair balancing of the priorities related to NASA's programs and the overall need for budgetary stringency.
- The OMB recommended reductions can be implemented without significant harm to NASA's programs, if overall fiscal considerations require it.
- That whatever the outcome of this issue, the ERTS-C decision should be addressed separately on its particular merits.