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THE WHITE HOUSE

WASHINGTON

September 7, 1976

MEETING WITH DR. JAMES FLETCHER

Wednesday, September 8, 1976

12:15 p.m. (30 minutes)

The Oval Office

From: Jim Cannon



I. PURPOSE

- . Part I (5 minutes) - to permit (1) Dr. Fletcher to present you a model of the Space Shuttle and (2) you to announce your request to Fletcher -- and his acceptance -- of a proposal to name the first shuttle orbiter the "Enterprise."
- . Part II (about 25 minutes) - to permit Dr. Fletcher to (1) report on NASA accomplishments, and (2) express his concerns about the space program.

II. BACKGROUND, PARTICIPANTS, AND PRESS PLAN

A. Background - Part I

The first important visible effort in the Shuttle program -- the roll-out of the first orbiter for the Space Shuttle -- occurs on September 17 at Palmdale, California. Your advisers have recommended (and Dr. Fletcher has agreed to accept) a request from you to name the orbiter the "Enterprise," -- a proposal made by thousands of "Star Trek" fans.

Background - Part II

1. Dr. Fletcher would like to report briefly on NASA accomplishments and plans, particularly on the Viking landings on Mars and the Space Shuttle.
2. He will also mention his concerns that U.S. space capabilities have eroded and that the NASA program has been cut too deeply. He had asked for an opportunity to present his concerns before decisions were made on 1978 Budget planning ceilings. Since planning ceilings have been set, he will be reluctant to stress his concerns now and probably will propose a later meeting for this purpose.

Dr. Fletcher's principal concerns are summarized at Tab A. His June 4, 1976 letter requesting a meeting is summarized at Tab B. The full letter is at Tab C.

The 1978 planning ceiling given NASA provides only for run-out costs of current commitments (including inflation). The overall NASA program would be reduced because there is no provision for new starts or replacements for programs being completed.

While unknown to NASA, OMB has counted in its own planning totals an additional \$90 million in BA (about 2-1/2 percent of ceiling) and \$40 million in outlays to initiate some 1978 new starts (e.g., space telescope). This will be welcomed by NASA but will not answer NASA's basic desire for a longer term commitment to program growth that would permit planning and executing a balanced space program.

B. Participants

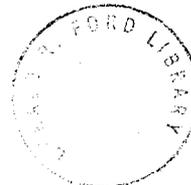
- . Part I - Dr. Fletcher
- . Part II - Dr. Fletcher and his Deputy Alan Lovelace
- The Vice President, Guy Stever, Jim Cannon, Jim Lynn, Bill Seidman and Bill Hyland

C. Press Plan

- . Part I - Press photo opportunity; sound on film
- . Part II - White House photographer

III. TALKING POINTS

- . Part I - Presentation: See Tab D.
- . Part II - Substantive Meeting:
 - . Jim and Alan, I'm looking forward to hearing more about your accomplishments on Mars and your progress on the Shuttle. Would you go ahead.
 - . I have your letter with your views on the space program and budget. I understand your concerns.
 - . We must hold a tight rein to achieve a balanced budget in 1979, but I want to be sure we consider your proposals. If we are able to accommodate some new starts in 1978, what would you select for highest priority?



TAB A

DR. FLETCHER'S PRINCIPAL ARGUMENTS IN SUPPORT OF HIS CONCERN
ABOUT THE SPACE PROGRAM

- . The space program has gained new public support with Viking successes.
- . NASA's overall program level has been held roughly level in current dollars since 1972; it has suffered a reduction in constant dollars. Growth in the Space Shuttle program has meant cuts in other programs.
- . NASA has received OMB assurances that future years' budgets would, as a minimum, provide for a balanced space program -- in addition to the Shuttle. But each year NASA has been cut below this level. NASA's 1978 budget of \$3.7 billion is \$1 billion below level OMB projected in 1972.
- . OMB's 1978 budget planning ceiling for NASA is far too tight and may force additional slippage in the Shuttle program.
- . NASA appears to have had less favorably budget treatment than other agencies.
- . NASA has a major economic "leveraging" effect and a major employment impact in several areas, including California, Texas, Florida, and Long Island.
- . The NASA-Industry-University team is an important technological resource that should be preserved and utilized.
- . U.S. technological leadership is at stake; the U.S. is falling behind in space (USSR) and in aeronautics (Western Europe).
- . While his letter calls for a 10 percent increase in real program growth, he will indicate satisfaction with a lower percentage.



TAB B

PRINCIPAL POINTS IN DR. FLETCHER'S LETTER AND ITS ATTACHMENTSLetter

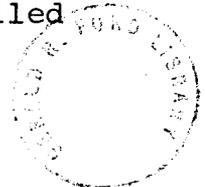
- . Over the past 5 years, NASA has "not been permitted to maintain the program breadth or momentum necessary for continued contributions to national security, international policy, and technological progress."
- . NASA has been held below its "critical threshold" with the risk of foregoing "future benefits in international prestige, military spinoffs, economic and industrial stimulation, and constructive non-inflationary employment."
- . NASA has reached a "breaking point," is losing much of its government-university-industry team, and the U.S. is in danger of losing leadership as a space power.
- . NASA's activity must be expanded or the civil space program will be irreparably damaged.
- . An initial 10 percent of real growth in program can make the difference.

Attachment 1 - Space and Aeronautics: Challenge and Opportunity

- . Cites major benefits of the aerospace program:
 - Element of international policy -- communications, weather services, earth and ocean resources and conditions.
 - Advanced technology for civil and military purposes.
 - Develop "high" technology -- with productivity and international trade benefits.
 - Inspiration for younger generations; forward looking technological problem solving.
- . Summarizes four potential major program thrusts detailed in Attachment 2.

Attachment 2 - NASA Five-Year Planning

- . Expansion of national services from space:
 - Global resource information system -- involves expansion of experimental LANDSAT (earth resources) program to provide regularly information on food, energy and other mineral resources; environmental quality, weather; and climate.



- Advancement of space communications -- to avoid loss of U.S. leadership in telecommunications technology to state-supported industries in Japan and Europe.
- . Beneficial occupancy of space -- as the next major manned space thrust beyond the Shuttle, a permanently manned center to:
 - Service new commercial devices and industrial processes possible only in unique space conditions (weightlessness; near-perfect vacuum).
 - Assemble, test and maintain large orbital structures for information, communications and solar energy.
 - Provide space research facilities, including tests needed to consider space colonization and long-duration planetary expeditions.
- . Integrated scientific exploration of the universe -- including:
 - New steps in remote exploration (e.g., orbital telescope) and direct exploration (e.g., planetary; atmospheric and surface sampling).
 - Use of knowledge about other planets better to understand and manage the earth.
- . Reestablish U.S. dominance in aeronautical technology including:
 - Energy-efficient technology to improve new models of current aircraft.
 - Regaining from Europe lead in supersonic transports, helicopters and short-haul transports -- to capture civil aircraft markets.

TAB C



National Aeronautics and
Space Administration

Washington, D.C.
20546

Office of the Administrator

June 4, 1976

The President
The White House
Washington, DC 20500

Dear Mr. President:

I have had the honor to serve as the Administrator of your National Aeronautics and Space Administration for the past five years. During that time, this exciting and dynamic agency has realized many proud accomplishments -- but these have come about largely as the consequence of earlier investments in science and technology.

As a matter of conscience and duty, I must inform you of the steady erosion of the United States space capabilities and of the dangers this poses. Over the past five years, we have not been permitted to maintain the program breadth or momentum necessary for continued contributions to national security, international policy, and technological progress.

If the civil program continues to be held below its critical threshold, we run a real risk of foregoing rich future benefits in international prestige, military spinoffs, economic and industrial stimulation, and constructive noninflationary employment -- as well as in critical new space capabilities. I feel we are also risking what may be the single most important potential for inspiring America's future generations. I have recently mentioned these problems to the Vice President, Brent Scowcroft, and Jim Cavanaugh among others. I believe they all were surprised at the serious loss of our abilities to compete, cooperate, or advance in space.

In my view, we have reached a breaking point: We have already lost much of the capability of our unique government-university-industry aerospace team, and are in danger of losing even more. We are risking not meeting important expanding international commitments. We are in danger of losing a critical national resource as well as our leadership as a space power. Even the

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*Interagency
Committee
on Space Programs*

usually conservative financial community is recognizing the signs of a national technological crisis -- and the shrinkage of the NASA program has been a major contributor to that crisis.

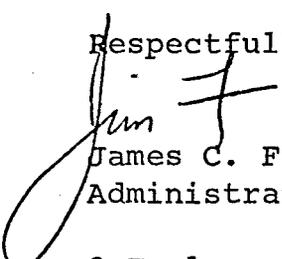
Mr. President, I wholeheartedly support your strong commitment to fiscal responsibility and balanced budgets. However, I must point out that NASA, the Executive Agency dedicated to creating long-term future technological strength for the Nation, is in critical difficulty. In blunt terms, if we cannot expand the scope of NASA's activity, the civil space program will be irreparably damaged.

I believe it is important to express my concerns directly to you before the start of the normal budget cycle. I am writing separately to Jim Lynn on this subject, and I will, of course, be working with him during the fall. In my judgment, the effort required to reverse current trends is relatively small. An initial 10% of real growth in program content can make the difference between a strong national program and one at or below the threshold of survival.

If you could make some time available, I would be most pleased to discuss the issue of NASA's future with you in detail. Recognizing your extraordinarily full schedule, I am enclosing two attachments which may help focus both the problem and opportunity: the first is a short paper on the civil aerospace program, and the second is a summary of a new five-year plan for space and aeronautics currently being developed.

On a different but related matter, Don Rumsfeld and I hope to meet with you later in the year to recommend a joint approach to the procurement of the operational Space Shuttle.

Respectfully,



James C. Fletcher
Administrator

2 Enclosures

cc: The Vice President
James T. Lynn
James M. Cannon
Lt. Gen. Brent Scowcroft
L. William Seidman
James H. Cavanaugh

TAB D

SPACE AND AERONAUTICS: CHALLENGE AND OPPORTUNITY

A rational, productive aerospace program is a vital component of the near- and long-term future of the United States -- and of the world.

- o Space technology is an integral element of international policy: the satellite has become indispensable to inter-continental communications and to international weather services; satellites are positive contributors to accurate United States information on global earth and ocean resources and conditions; aerospace programs provide the United States powerful selective options for cooperation or competition with advanced and developing nations.
- o Space technology -- and the concomitant of an advanced and imaginative aerospace industry -- is critical to the national defense posture of the United States. Civil programs, because of their open, exploratory character, generate broad technological advance that energize entire industries as well as being directly employed for civil or military ends.
- o Aerospace programs, by their nature, are at the cutting edge of technological advance -- they demand and create, above all, "high" technology. Technology of all levels is recognized as a necessary major contributor to national productivity; what is less well recognized is the enormous economic leverage exercised by investment in and development of "high" technology. Recent assessments indicate that a dollar spent in NASA R&D creates a 14:1 return over 10 years in terms of increased productivity alone, and that small but sustained changes in the levels of NASA expenditures have a disproportionately large effect in creating and sustaining permanent new jobs in the national economy.
- o The challenge of space is an exciting inspiration to the younger generations of America and the world. The nation that meets this challenge boldly will strengthen and enlarge the spirit of all its citizens and create the drive for future progress and achievement.

- o The civil space agency -- NASA -- is the single Federal instrumentality squarely focused on the future. NASA has developed into the nation's most effective technical problem-solving agency. It is an instrument available for use; it should not be allowed to sag into mediocrity or to dwindle away for lack of forward-looking assignments.

An immediate opportunity now lies before our country: to mobilize its civil aerospace resources in pursuit of national objectives. If action is not taken, the nation's ability to mount effective programs will erode beyond repair, and the international competitors of the United States will establish commanding leads in such areas as permanent manned facilities in space, planetary exploration, space communications, and high speed intercontinental aviation. Aerospace objectives of great value and importance are:

- o A global information service -- strengthening the United States' posture at home and abroad with revolutionary improvements in timely and accurate reporting on world-wide economic and environmental conditions through the organized use of space-based observation systems.
- o Permanent American occupancy of space -- guaranteeing free access to space by all for peaceful purposes, providing a new and expanding dimension for United States industry and commerce in exploiting the unique environment and technology of space for new goods and services, and opening new horizons for the human spirit.
- o The integrated scientific exploration of the Universe -- to find the answers to central questions of life, matter, and energy.
- o Reestablishment of American preeminence in aviation -- creating the commercial competence to compete effectively in world markets with new aircraft using new designs, materials, propulsion and technology.

The returns from investment in civil aerospace are power -- economic, scientific, and political. This can flow only from a steady level of activity; research and development cannot

thrive or deliver its technological products in an environment of uncertain commitment or sporadic support. Focused investments in high technology are significant national economic tools in the search for prosperity without inflation.

To provide for the future requires thoughtful and prudent investments in the present. At stake are the leadership, prestige, and power of the United States in a critical technological domain affecting the life and livelihood of every citizen -- and, through example and political extension of that power, the future of all the world.

June 4, 1976

NASA FIVE-YEAR PLANNING

INTRODUCTION

The management of the National Aeronautics and Space Administration is preparing a five-year plan to provide an integrated framework within which policy and program recommendations and decisions can be evaluated. While not complete at this time, the basic structure of the recommended five-year plan is outlined below.

One critical factor must be kept in mind: the lead-times involved in the development of sophisticated space technology are often such that individual projects may require as much as five to seven years to be complete; in the case of certain exploration missions to the far planets, flight times of as many years are required before new information can be received on earth. The planning context, therefore, has to extend considerably beyond the next five years in order to provide a solid base for the near-term decisions.

In addition, plans for the future must be carefully integrated with the present ongoing program. It is important to take maximum advantage of momentum and technical capabilities in being, and to be ready to exploit new or enlarged opportunities presented by the evolving scientific and technological environment.

GOALS AND OBJECTIVES

The first generation of space and aeronautical activity has come of age. Taken together, the growing maturity of the existing technologies, the experimental successes of the first tentative moves toward delivery of new services from space, the preliminary investigations of important natural phenomena, and the rapid expansion of space and aeronautical activities abroad, now require the United States to choose the major directions for the future that will be pursued in the national interest. These goals and objectives cannot, and should not, be either all-encompassing or narrowly rigid; they must, however, reflect a sense of national purpose, provide a basis for measuring accomplishment, and offer a set of unique and important values in their own right.

The National Aeronautics and Space Administration has identified four goals to characterize the national space and aeronautics program for the next decade. These flow naturally from the growing world consensus on the definition of the major problems and questions confronting human society, from the political and economic realities of today, and from the ongoing programs of the United States and other nations.

1. A major goal is the rapid expansion of significant national services from space. The past fifteen years have sufficiently proven the capabilities of space systems for global observation and communications; the challenge now is to exploit fully these important capabilities for the United States, recognizing that otherwise the advantages of time and technology will pass to others.

a. One clear direction to follow is the immediate implementation of a global resources information system. This represents a major policy decision with enormous implications for the future of the United States. Critical national decisions of international importance depend on accurate, timely, and continuing information about food, energy, environmental quality, and climate. Space observations coupled with new computer techniques would provide accurate bi-weekly forecasts of global agricultural production for all crops of major economic significance, geological assessments related to the potential for mineral and petroleum discovery and recovery, water quality status and trends, ocean condition forecasts, and eventually annual and long-term climate predictions.

This wholly new class of information services, already being experimentally demonstrated in grain surveys, would afford the United States a widely expanded horizon for wise political and economic decisions in areas ranging from agricultural commodity exports through national resources management to avoidance of climatic catastrophe. It behooves the United States to have and to use these capabilities in

pursuit of domestic and international policy objectives rather than have them developed by others in opposition to United States aims.

The Next Five Years. The expansion of the current Landsat experimental program would begin immediately, allowing the inclusion of improved instruments and relying on dual satellites to afford repetitive world coverage every nine days. A new and complex ground data handling system, to extract and disseminate information from satellite data rapidly and incorporating forecasting and prediction models, would be developed at the same time. Major milestones tied to an investment of less than \$100 million per year would be:

-- By 1981, bi-weekly global wheat production forecasts.

-- By 1983, begin production forecasts for rye, oats, barley, rice, corn, soybeans, and sugar; and, global geological resources assessments and ocean condition prediction.

-- By 1985, using an expanded system combining low and synchronous satellite observatories, and an understanding of climate trends and mechanisms.

-- By 1990, routine delivery of the full range of terrestrial, oceanic, and climatic information, leading to climate prediction services.

- b. Another clear direction to follow is the aggressive advancement of space communications to assure United States industrial superiority. Current assessments indicate that, without a significant national program in space communications technology, United States industry will lose its present position of international leadership to the state-supported industries of Japan and Europe. Already key elements of

international telecommunications services, particularly in the high-power, high-frequency regimes, are being provided by German and Japanese technology more advanced than that which United States industry has been able to sponsor with its own resources. Similarly, new national services made possible and economical because of space technology are ready to be deployed to improve the quality of life and the sense of security of every citizen. Recognition of a Federal responsibility for the health and progress of the private United States telecommunications industry is, in itself, a significant policy initiative.

The Next Five Years. For the competitive advancement of civil space communications technology and the development of practical new commercial services -- such as personal mobile telecommunications, remote health care delivery, direct broadcast to individual receivers, or expanded electronic mail -- joint development and demonstration programs with the electronics and communications industries would establish an American beachhead in high-power, high-frequency satellite technology. The demonstration systems, once developed, could then be leased to commercial operators to amortize the Government's technology investment.

A more immediate new application of space communications services -- search and rescue -- would be demonstrated in 1981 for some \$30 million. A key problem in the past has been the unambiguous location of an emergency distress signal. Satellites in conjunction with the new software and aircraft and shipboard emergency transmitters would overcome these limitations. Full-scale operational deployment following the demonstration would be in 1984.

2. Another major goal is the permanent beneficial occupancy of space to promote the national interest, to assure that space will be kept an open resource for all peaceful purposes of free peoples, and to forbid the foreign domination of space.

Current United States programs are focused on the Shuttle and Spacelab systems, critical elements in expanding the scope and capability of short duration space activities at low recurring costs. The next generation of capability, building on the experience developed in the first phase of space utilization, would have the development of the commercial utility of space as a major thrust. This industrialization of space would create new markets, new products and new economic strength for the United States. The position the United States holds in space technology and the investment the United States has made in space capability must be fully exploited to maintain United States world leadership. The key element would be a permanent manned orbital center to service new commercial devices and industrial processes that take full economic advantage of the unique space conditions -- weightlessness, access to a near-perfect vacuum, and solar energy.

The same center would serve as a construction base for the assembly, test, and maintenance of the very large orbital structures required in the future for information acquisition, communications, and energy management. As a research and development laboratory, the center would house experimental and operational research instruments -- telescopes, antennas, biological instrumentation, physics and chemistry facilities -- for continuing investigations under essentially shirt-sleeve conditions.

Serviced by the Shuttle, the space center would be the most important test of future opportunities which may prove critical to man's continued development: long-duration manned planetary expeditions, space colonization, and expansion of human civilization into the solar system.

The Next Five Years. Technology programs using the Shuttle and Spacelab will foster the development of the orbital techniques and methods required for the space center. Spacelab manufacturing and processing experiments -- taking advantage of the space environment to create such new materials as unique crystals, semiconductors, integrated circuits, or pharmaceuticals -- will be intensively pursued in conjunction with United States industry beginning with the earliest Shuttle flights in 1979. Major new milestones, presuming an investment level for these elements growing toward \$900 million by 1983, are:

-- By 1982, the first experimental large space structure -- perhaps a 100-meter antenna supporting the expanded space communications effort -- would have been assembled in orbit by crews operating from the Shuttle to demonstrate space construction and maintenance techniques.

-- By 1984, the first permanent space center -- a 4-to-6-man space station -- would be in operation, together with the first commercial manufacturing and processing facilities which would be expected to repay their costs early in this phase of space utilization. The space center would use an evolutionary modular design initially based on the technologies developed for Skylab, Shuttle, and Spacelab. Space center operations would rely on the Shuttle for transportation and service, and the center would be designed to permit major expansion in size and function without encountering technological obsolescence.

-- By 1986, a small-scale prototype of a solar power energy system would be in operation, initially converting solar energy to electrical power for use within the space center. If necessary, this technology could be later expanded to provide beamed energy from space to earth for commercial use; this would also require expansion of the space center to a 12-man station and development of synchronous visit and operations capability.

3. A third goal is the integrated scientific exploration of the Universe: to push back its frontiers, to discover its origin, evolution, and future; to probe and master its dynamic processes; and to understand its relationship to life on Earth and elsewhere.

A new element in NASA's continuing science work is the development of a program that brings together in a new core the traditionally separate disciplines and approaches of classic space research. It is necessary to relate the atmospheres of far planets to our own, the mechanisms of our sun to those of other stars, the tectonics of Earth to those of Mars and Venus and Mercury, the geochemistry of the Moon to that of the terrestrial planets and asteroids and major satellites.

Exploration falls into two large classes: in remote exploration, man uses instruments to observe and measure phenomena at great distances; in direct exploration, man or his instruments operate at the site of the phenomenon.

Remote exploration is characterized by the orbital telescope, operating for extended periods in selected spectral bounds to study the Sun, far stars and galaxies, nearby planets and moons. Direct exploration within the solar system starts with initial reconnaissance, followed by detailed study for extended periods, and in special cases, atmospheric and surface samples must be returned to Earth for analysis. The ultimate steps may include temporary or permanent human occupancy, supported by a planetary environment tailored to human needs.

Connecting remote and direct exploration of the solar system and the Universe to life on Earth is the translation of new knowledge of extraterrestrial phenomena -- energy generation and transmission, internal star dynamics, planetary atmospheric activity -- into clearer understanding of our own life support system of sun, air, and oceans. It is this understanding -- and the wise long-term management of the Earth that can stem therefrom -- that will guarantee a continued safe habitation for man on his home planet.

The Next Five Years. The total space science and exploration program, covering as it does a multiplicity of targets and many disciplines, is not readily summarized. The major elements noted below are only a part of an overall program estimated to require some \$600 million per year. There would need be augmentation beyond this level if, for example, it becomes necessary to follow up the discovery of life within the solar system or of intelligence within the galaxy.

The most critical and immediate need in remote exploration capability is the 2.4-meter Space Telescope, a permanent man-tended orbital facility that can quadruple the reach of man into the Universe, can find planets around nearby stars, can look back into time some 15 billion years, and can help decipher the now unexplained energy-generating mechanisms of stellar systems and objects. The Space Telescope would be delivered into orbit by the Shuttle in 1983 and maintained thereafter by routine service flights. Other remote exploration needs would be met by a 1981 solar mission to view the Sun's poles, thought to be sources of particles escaping to galactic space, by continuing Spacelab flights starting in 1982 and carrying such instruments as 1-meter solar and infrared telescopes, and by a second generation of refurbishable high-energy observatories operating in 1983.

The most critical and immediate new capability for direct exploration of the planets would be embodied in a long-duration orbital planetary laboratory carrying multiple atmospheric probes. This mission would first be launched to Jupiter in 1981 to analyze the unique atmosphere of that giant planet and to define its magnetosphere and radiation belts. A similar mission would be launched to Saturn in 1984.

Exploration of the terrestrial planets would rely on a geophysical/geochemical long-duration orbiter, the first deployed around the Moon in 1981 and another around Mercury in 1983. The pervasive cloud layer of Venus

requires an orbital radar mapper to investigate the surface; this mission would be launched in 1983. The findings of the 1976 Viking surface exploration of Mars will define critical follow-on investigations; a major step would be the automated return of surface samples to Earth for analysis.

4. The final goal is to reestablish United States dominance in aeronautical technology and, concomitantly, to assure United States preeminence in civil aviation markets at home and abroad. Civil aviation, comprising aircraft manufacturers and airline operators, has been among the most successful of the United States commercial sectors. The historical reasons for this success have been three-fold: a reliable base of Federal research and technology, consistently supported since 1915, responsible for managing national aeronautical facilities as well as for technical advances in aviation; a steady demand for new aircraft types for military purposes and their subsequent deployment into the civil sector; and a healthy condition of competition for both domestic and foreign markets among the United States airlines and manufacturers.

Aviation is still growing; 800 billion revenue passenger miles per year are predicted by 1986, or double current world levels. Through 1986 there will be a world-wide market of \$50 billion for civil transports, and demand is growing for efficient and profitable short-haul aircraft, helicopters, and general utility aircraft.

The United States aviation industry today, however, is not in a position to capitalize on opportunities for new markets: the airlines' economic difficulties, driven by fuel costs and the problems of operating an aging fleet, are deferring orders for new aircraft; the manufacturers cannot finance the development of new systems for lack of capital and because the needed new technologies have not been exercised to the point of being ready for new

aircraft at reasonable risk; and for the first time, aggressive state-supported foreign competition is threatening to penetrate former United States markets and to seize a disproportionately large share of new markets now just opening.

In supersonic passenger service, in helicopters, and in quiet short-haul transports, the Europeans already are ahead of the United States. In military aviation, United States superiority is no longer assured. United States leadership can be regained only by a purposeful injection of high technology tailored to the specific economic and transportation environment of the mid-'80's and beyond.

The Next Five Years. Current estimates suggest that an increase in aeronautical research and technology investment over the current \$200 million per year level would be necessary if the United States is to regain -- and maintain -- a position of leadership in world aviation through the end of the century. Advanced aeronautical facilities and a sustained government-industry technological partnership are important ingredients of that leadership. Significant areas of effort would include:

- An integrated energy-efficient technology package to improve new models of current aircraft within the next five years and to permit the wholly new aircraft of the mid-eighties to operate at half today's fuel consumption.
- A focused effort on quiet, efficient supersonic transport technology to place United States industry in a position by 1985 to respond to the Franco-British and Soviet initiatives in this area.
- Developments for high speed vertical take-off aircraft with important military as well as civil applications.
- Design and engineering advances for quiet, comfortable, economical helicopters that have a wide domestic and foreign market.

-- Technology and systems engineering to improve the economics of agricultural aviation services.

SUMMARY

The goals and challenges sketched above together represent the opportunity that now lies before the United States:

- To capitalize on prior investment in space and aeronautics.
- To establish new thresholds of national strength and creativity.
- To regain an unquestioned position of world leadership in high technology deployed in the public interest.

June 4, 1976

file

SIGNATURE

THE WHITE HOUSE
WASHINGTON

Energy

September 8, 1976

MEMORANDUM FOR: JIM CANNON
FROM: *[Signature]* GLENN SCHLEEDE
SUBJECT: PRESIDENTIAL MEETING WITH
DR. FLETCHER

1. The revised briefing paper is attached.
2. The time for the meeting is still uncertain; alternatives are 12:15, 2:00 and 4:00. We are supposed to get a final answer early Wednesday.
3. The format for the meeting has been revised in accordance with your instructions. If the weather is good, the presentation probably will be made on the steps leading to the Rose Garden.
4. I talked at length with Jim Fletcher and Alan Lovelace. They have agreed to spend nearly all the substantive meeting time on accomplishments.
5. Fletcher will present the President with a 30x40 inch picture of Mars from the second landing. It will first be used in his briefing.
6. Talking points for the presentation of the Shuttle model will arrive from Mr. Hartmann's office (directly to Terry O'd).



THE WHITE HOUSE
WASHINGTON

September 13, 1976

MEMORANDUM FOR: JIM CANNON
FROM: GLENN SCHLEEDE
SUBJECT: ROLL-OUT OF SPACE ORBITER
AT PALMDALE, CALIFORNIA

Attached is a listing of persons from White House, Executive Office of the President and Heads of Agenices that will be attending.



Dr. Dave Elliott
Dr. Guy Stever
Memphis A. Norman, OMB
Mr. Glenn Schleede
Mr. Dennis Barnes
Mr. William Nicholson
Mr. Mike Collins, Head, Air and Space Museum
Mr. Bill Gorog
Mr. Dick Allison
Dr. Arthur Fletcher
Mr. John Calhoun

THE WHITE HOUSE
WASHINGTON
September 13, 1976

MEMO TO: SUSAN PORTER
FROM: GLENN SCHLEIDE *Glenn*
SUBJECT: ROLL-OUT OF SPACE ORBITER

Attached is the information you requested.
If you need any more, please let me know.

cc: Jim Cannon

Attachment.

UNVEILING OF THE FIRST ORBITER FOR THE SPACE SHUTTLE

On Friday morning, September 17, NASA will roll out of a hangar at Palmdale, California, the first orbiter for the space shuttle.

The orbiter is the part of the shuttle which is sent into space on the back of a large, 3 part rocket. It is cut loose in space, performs its missions, and then is piloted back to earth for refurbishing and use in another mission.

The fact that the orbiter is reusable is the unique feature of the shuttle program. (Also, the parts of the 3 part launching rocket are recoverable for reuse; only the large center tank is expendable).

The shuttle program is particularly significant because it will mark the return of U.S. participation in manned space flight which had ended with the joint U.S.-Soviet Appollo-Soyuz docking mission last year.

On September 8, NASA Administrator Jim Fletcher met with the President in the Oval Office and presented him with a model of the shuttle -- which currently remains in the Oval Office.

At that meeting, the President announced that he had asked NASA to name the first orbiter the "Enterprise" -- in response to requests from thousands of "Star Trek" fans.

Current Plans for the Ceremony

- . It will be held at an Air Force-owned hangar (hangar #42) at the Palmdale, CA municipal airport. The hangar is leased to the Rockwell International Corporation, the prime contactor for building the orbiter.
- . Ceremony schedule -- which is subject to some change:
 - will start at 9:30 a.m.
 - John Yardly, Associate Administrator of NASA for manned space flight, will be master of ceremony.
 - There will be an invocation by David Rogne, Pastor of a United Methodist Church in nearby Lancaster, CA.
 - Senator John Tunney (at his request) will welcome everyone to California.
 - Senator Goldwater will make brief remarks.
 - Either Congressman Teague or Fuqua will make brief remarks and signal for the roll-out of the orbiter. (NASA had hoped that the President would appear at this point and that he would signal the roll-out)

- NASA Administrator Fletcher will make remarks.
- The ceremony will be ended at approximately 10:30 a.m.

Contacts

The principal contact at NASA headquarters -- who has authority to make changes in the ceremony -- is Mr. Herbert Rowe, Associate Administrator for External Affairs. His telephone #202-755-8542.

The contact man in Palmdale is Mr. O.B. (Bill) Lloyd, Jr. He normally serves as the Director of Public Services at NASA headquarters but is handling on-the-scene arrangements of the ceremony at Palmdale. His telephone number is 805-258-8221. He has been alerted to the possibility that he will be contacted.

me

UNITED STATES
ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION
WASHINGTON, D.C. 20545

1976 SEP 22 PM 2 59
September 20, 1976

MEMORANDUM

TO : JAMES CANNON
FROM : ROBERT W. FRI *FR*
SUBJECT: Inventors

You may recall that we talked several months ago about ERDA's Inventors Program, and that you asked me to let you know if any interesting inventors came out of it.

We have now received 3,200 invention applications, and eight have been evaluated as possibly feasible. Of these, one seems to have the characteristics that might interest you. These are:

- the invention is a clever idea for converting heat energy directly to electrical energy. It could be used for solar power, but might also be used for other applications.
- the inventor is Joseph C. Yater of Massachusetts, who owns his own consulting firm.
- ERDA has agreed to support the construction and evaluation of a prototype of Yater's invention. The Patent Office is considering giving Yater a patent for the device.
- according to a newspaper story on the subject, Yater "credits Representative Leo J. Ryan (D-California), Chairman of the House Conservation, Energy, and Natural Resources Subcommittee, as being chiefly responsible for demonstrating the potential benefits of the invention." I don't know what this connection is.

If you want me to pursue this any further, I will be happy to do so. In any event, I think this is the best and clearest example of the inventors program that is likely to come along for a little while.

*JMC says
bring him in.*



092210

THE WHITE HOUSE
WASHINGTON
September 29, 1976

Quern
F.
ACTION
DECISION

MEMORANDUM FOR: JIM CANNON
THROUGH: GLENN SCHLEIDE *Glenn*
FROM: DENNIS BARNES *Dennis*
SUBJECT: NATIONAL SCIENCE BOARD ANNUAL REPORT



The National Science Board's eighth annual report, "Science at the Bicentennial: A Report from the Research Community" is awaiting transmittal by the President to the Congress.

The focus of this year's Report is the results of a 1975 survey of problems facing basic research in the next 10-20 years. The observations are critical of the Federal support of science in recent years.

Because of the way in which the survey was conducted -- to identify problems facing basic science -- the tone of the Report is pessimistic and critical. Much, but certainly not all, of the criticism is levelled at the Federal government for the allegedly inconsistent way in which it views the place of basic research and provides funding, particularly since the mid-1960's.

The Report does not note the responsive initiatives of the President in:

- . Establishing the Office of Science and Technology Policy in the Executive Office
- . Requesting significantly increased Federal funding for R&D, including basic research.

We are proposing a transmittal letter which identifies the President's initiatives which are responsive to the needs for Federal attention expressed in the survey.

RECOMMENDATION

That you sign the attached memorandum to the President recommending transmittal of the Report to Congress.

Attachment.

I concur.
Allen / Quern concur
Sent 9/30

ACTION

THE WHITE HOUSE
WASHINGTON

September 30, 1976

MEMORANDUM FOR THE PRESIDENT
FROM: JIM CANNON *J Cannon*
SUBJECT: National Science Board Report

Attached for your consideration is a proposed message to the Congress transmitting the Eighth Annual Report of the National Science Board, Science at the Bicentennial--A Report from the Research Community.

A brief summary of the report is provided at Tab A.

The report is basically negative in tone because it contains a summary of responses to a survey that sought to identify problems perceived by opinions of research managers from industry, universities, government and independent research institutes.

The proposed transmittal message seeks to overcome this tone in part by actions to increase Federal funding for R&D, particularly basic research, and to create an Office of Science and Technology Policy in the White House.

OMB, Max Friedersdorf, Counsel's Office (Kilberg) and I recommend approval of the proposed transmittal message which has been cleared by the White House Editorial Office (Smith).

RECOMMENDATION

That you sign both originals of the message at Tab B.

