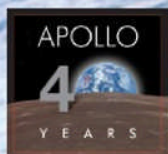




Message from Author:

The inspiration for this book came from my father who was responsible for testing a remote sensor part, manufactured by a small engineering firm and used on the Apollo 11 mission. I remember seeing the pictures he took at Cape Canaveral of the July 16, 1969 lift-off. With the approach of the 40th Anniversary of Apollo 11, I decided to document the details of his involvement so I could share the story with my children. While doing research, I discovered there were nearly 400,000 regular everyday folks of the Apollo Generation, just like my father, who played a role in landing man on the moon. Many of their stories are featured here. I also included interviews of people from all walks of life, spanning four generations, who shared their memories of this historic event and the impact of the space program on their lives today. You'll read a collection of childhood memories, untold stories, unsung heroes and dreams fulfilled. My hope is that the stories and legacy of reaching the moon, as narrated by real-life 'stars', will continue to influence and inspire future generations in the years to come. — *Eva Abreu, Author*

Eva Abreu is a speaker and Social Media consultant who enjoys connecting and collaborating using Twitter, Facebook and other social networks. A former technology manager in investment banking, she is also founder of Eva Abreu Productions LLC and Sort Things Out. She coordinates intergenerational programs in her community, is a graduate of Rutgers University, and a wife and mom in New Jersey (USA). Always curious to hear your stories, Eva has plans for more books in the series.



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Abreu

REACHING for the MOON and the STARS

REACHING

f o r t h e

MOON

a n d t h e

STARS

**The Legacy and
Influence of the
Apollo Generation**

Eva Abreu



Chapter 1 – The Initial Vision The Legacy and Influence of John F. Kennedy

"It will not be one man going to the moon—it will be an entire nation. For all of us must work to put him there."

~*President John F. Kennedy*



May 25, 1961 Speech by President Kennedy at Joint Session of Congress
<http://history.nasa.gov/1658.jpg>

Before we discuss the memories and stories of the people behind the scenes of Apollo 11, I think it's important to reflect upon the initial vision of going to the moon, how it was crafted, and how a few words by John F. Kennedy had sparked such a global impact, leaving behind a historic legacy and influence for generations to come.

President Kennedy understood how to reach the American public. He put forth a single collective vision and Americans responded with their full support and loyal commitment. The timing and delivery of his message left such an impact on the people that they held true to his vision and

CHAPTER 1 – LEGACY OF JOHN F. KENNEDY

worked together to see it become a reality, even after his untimely death.

The appeal of his vision allowed the average citizen, young and old, to actively participate in the ultimate adventure of exploring space and the unknown. Every person was called upon to join U.S.A.'s 'Team Apollo', even if it was just from the sidelines, to show their support for the United States in the global race to reach the moon first. The goal was to become the world leader in space; this would demonstrate the nation's superior knowledge in science and technology. It was also an assurance that freedom would continue to reign in the free world.

At the time, there was tremendous pressure to have the United States catch up and overtake the Soviet Union in the space race. Historians attribute the 'Cold War' as the underlying reason for Kennedy's sense of urgency (*NASA History Office*).

In the weeks leading up to his landmark speech, Kennedy consulted with top officials to address key factors outlined in a one-page memo to Vice President Lyndon B. Johnson on April 20, 1961 (see following page) (*JFK Library & Museum*).

REACHING FOR THE MOON AND THE STARS

THE WHITE HOUSE
WASHINGTON

April 20, 1961

MEMORANDUM FOR

VICE PRESIDENT

In accordance with our conversation I would like for you as Chairman of the Space Council to be in charge of making an overall survey of where we stand in space.

1. Do we have a chance of beating the Soviets by putting a laboratory in space, or by a trip around the moon, or by a rocket to land on the moon, or by a rocket to go to the moon and back with a man. Is there any other space program which promises dramatic results in which we could win?
2. How much additional would it cost?
3. Are we working 24 hours a day on existing programs. If not, why not? If not, will you make recommendations to me as to how work can be speeded up.
4. In building large boosters should we put out emphasis on nuclear, chemical or liquid fuel, or a combination of these three?
5. Are we making maximum effort? Are we achieving necessary results?

I have asked Jim Webb, Dr. Weisner, Secretary McNamara and other responsible officials to cooperate with you fully. I would appreciate a report on this at the earliest possible moment.



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Vice President Johnson reported back to the President in a 6-page confidential memo dated April 28th (*JFK Library & Museum*)



OFFICE OF THE VICE PRESIDENT
WASHINGTON, D. C.

April 28, 1961

MEMORANDUM FOR THE PRESIDENT

Subject: Evaluation of Space Program.

Reference is to your April 20 memorandum asking certain questions regarding this country's space program.

A detailed survey has not been completed in this time period. The examination will continue. However, what we have obtained so far from knowledgeable and responsible persons makes this summary reply possible.

Among those who have participated in our deliberations have been the Secretary and Deputy Secretary of Defense; General Schriever (AF); Admiral Hayward (Navy); Dr. von Braun (NASA); the Administrator, Deputy Administrator, and other top officials of NASA; the Special Assistant to the President on Science and Technology; representatives of the Director of the Bureau of the Budget; and three outstanding non-Government citizens of the general public: Mr. George Brown (Brown & Root, Houston, Texas); Mr. Donald Cook (American Electric Power Service, New York, N. Y.); and Mr. Frank Stanton (Columbia Broadcasting System, New York, N. Y.).

The following general conclusions can be reported:

- a. Largely due to their concentrated efforts and their earlier emphasis upon the development of large rocket engines, the Soviets are ahead of the United States in world prestige attained through impressive technological accomplishments in space.
- b. The U. S. has greater resources than the USSR for attaining space leadership but has failed to make the necessary hard decisions and to marshal those resources to achieve such leadership.

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c. This country should be realistic and recognize that other nations, regardless of their appreciation of our idealistic values, will tend to align themselves with the country which they believe will be the world leader -- the winner in the long run. Dramatic accomplishments in space are being increasingly identified as a major indicator of world leadership.

d. The U.S. can, if it will, firm up its objectives and employ its resources with a reasonable chance of attaining world leadership in space during this decade. This will be difficult but can be made probable even recognizing the head start of the Soviets and the likelihood that they will continue to move forward with impressive successes. In certain areas, such as communications, navigation, weather, and mapping, the U.S. can and should exploit its existing advance position.

e. If we do not make the strong effort now, the time will soon be reached when the margin of control over space and over men's minds through space accomplishments will have swung so far on the Russian side that we will not be able to catch up, let alone assume leadership.

f. Even in those areas in which the Soviets already have the capability to be first and are likely to improve upon such capability, the United States should make aggressive efforts as the technological gains as well as the international rewards are essential steps in eventually gaining leadership. The danger of long lags or outright omissions by this country is substantial in view of the possibility of great technological breakthroughs obtained from space exploration.

g. Manned exploration of the moon, for example, is not only an achievement with great propaganda value, but it is essential as an objective whether or not we are first in its accomplishment -- and we may be able to be first. We cannot leapfrog such accomplishments, as they are essential sources of knowledge and experience for even greater successes in space. We cannot expect the Russians to transfer the benefits of their experiences or the advantages of their capabilities to us. We must do these things ourselves.

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h. The American public should be given the facts as to how we stand in the space race, told of our determination to lead in that race, and advised of the importance of such leadership to our future.

i. More resources and more effort need to be put into our space program as soon as possible. We should move forward with a bold program, while at the same time taking every practical precaution for the safety of the persons actively participating in space flights.

* * * * *

As for the specific questions posed in your memorandum, the following brief answers develop from the studies made during the past few days. These conclusions are subject to expansion and more detailed examination as our survey continues.

Q. 1 - Do we have a chance of beating the Soviets by putting a laboratory in space, or by a trip around the moon, or by a rocket to land on the moon, or by a rocket to go to the moon and back with a man. Is there any other space program which promises dramatic results in which we could win?

A. 1 - The Soviets now have a rocket capability for putting a multi-manned laboratory into space and have already crash-landed a rocket on the moon. They also have the booster capability of making a soft landing on the moon with a payload of instruments, although we do not know how much preparation they have made for such a project. As for a manned trip around the moon or a safe landing and return by a man to the moon, neither the U. S. nor the USSR has such capability at this time, so far as we know. The Russians have had more experience with large boosters and with flights of dogs and man. Hence they might be conceded a time advantage in circumnavigation of the moon and also in a manned trip to the moon. However, with a strong effort, the United States could conceivably be first in those two accomplishments by 1966 or 1967.

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There are a number of programs which the United States could pursue immediately and which promise significant world-wide advantage over the Soviets. Among these are communications satellites, meteorological and weather satellites, and navigation and mapping satellites. These are all areas in which we have already developed some competence. We have such programs and believe that the Soviets do not. Moreover, they are programs which could be made operational and effective within reasonably short periods of time and could, if properly programmed with the interests of other nations, make useful strides toward world leadership.

Q. 2 - How much additional would it cost?

A. 2 - To start upon an accelerated program with the aforementioned objectives clearly in mind, NASA has submitted an analysis indicating that about \$500 million would be needed for FY 1962 over and above the amount currently requested of the Congress. A program based upon NASA's analysis would, over a ten-year period, average approximately \$1 billion a year above the current estimates of the existing NASA program.

While the Department of Defense plans to make a more detailed submission to me within a few days, the Secretary has taken the position that there is a need for a strong effort to develop a large solid-propellant booster and that his Department is interested in undertaking such a project. It was understood that this would be programmed in accord with the existing arrangement for close cooperation with NASA, which Agency is undertaking some research in this field. He estimated they would need to employ approximately \$50 million during FY 1962 for this work but that this could be financed through management of funds already requested in the FY 1962 budget. Future defense budgets would include requests for additional funding for this purpose; a preliminary estimate indicates that about \$500 million would be needed in total.

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Q. 3 - Are we working 24 hours a day on existing programs. If not, why not? If not, will you make recommendations to me as to how work can be speeded up.

A. 3 - There is not a 24-hour-a-day work schedule on existing NASA space programs except for selected areas in Project Mercury, the Saturn-C-1 booster, the Centaur engines and the final launching phases of most flight missions. They advise that their schedules have been geared to the availability of facilities and financial resources, and that hence their overtime and 3-shift arrangements exist only in those activities in which there are particular bottlenecks or which are holding up operations in other parts of the programs. For example, they have a 3-shift 7-day-week operation in certain work at Cape Canaveral; the contractor for Project Mercury has averaged a 54-hour week and employs two or three shifts in some areas; Saturn C-1 at Huntsville is working around the clock during critical test periods while the remaining work on this project averages a 47-hour week; the Centaur hydrogen engine is on a 3-shift basis in some portions of the contractor's plants.

This work can be speeded up through firm decisions to go ahead faster if accompanied by additional funds needed for the acceleration.

Q. 4 - In building large boosters should we put our emphasis on nuclear, chemical or liquid fuel, or a combination of these three?

A. 4 - It was the consensus that liquid, solid and nuclear boosters should all be accelerated. This conclusion is based not only upon the necessity for back-up methods, but also because of the advantages of the different types of boosters for different missions. A program of such emphasis would meet both so-called civilian needs and defense requirements.

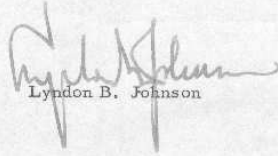
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Q. 5 - Are we making maximum effort? Are we achieving necessary results?

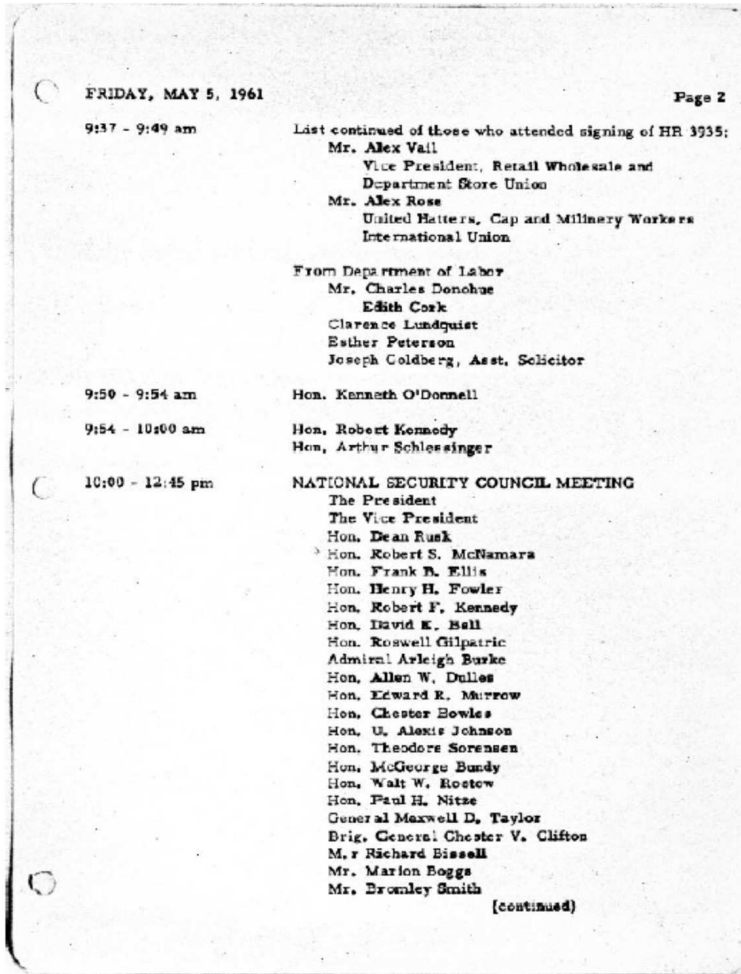
A. 5 - We are neither making maximum effort nor achieving results necessary if this country is to reach a position of leadership.



Lyndon B. Johnson

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On Friday, May 5, 1961, one week after Vice President Johnson sent his memo, President Kennedy prepared for a full day of business, including a National Security Council Meeting at 10:00 am (see his appointment book below):



Appointment Book Page for May 5, 1961, White House Diary
John F. Kennedy Presidential Library and Museum, Boston, MA
<http://www.jfklibrary.org>

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On the same day, May 5, 1961, Astronaut Alan B. Shepard, Jr. launched at 9:34am EST aboard the spacecraft *Freedom 7*. His 15 minute 28 second flight was a history-making event, seen live on television by millions around the world. (*NASA History Office*).

President Kennedy took a moment out of his busy day to watch Shepard's space flight:



(L-R) Attorney General McGeorge Bundy, Vice President Johnson, Arthur Schlesinger, Admiral Arleigh Burke, President Kennedy, Mrs. Kennedy. White House, Office of the President's Secretary, May 5, 1961. Photograph by Cecil Stoughton. JFK Library & Museum, ST-116-9-61. Copyright: Public Domain.

Kennedy's speech to Congress was delivered 20 days later, on May 25, 1961. Here are several key excerpted sections which highlight the sense of adventure, advancement in the space race, and American pride that fueled and ignited the passion within the Apollo Generation to bring forth Kennedy's vision to reality:

"Now it is time... for this nation to take a clearly leading role in space achievement, which in many ways may hold the key to our future on earth.

Recognizing the head start obtained by the Soviets...and the likelihood that they will exploit this lead for some time to come in still more impressive successes, we nevertheless are required to make new efforts on our own. For while we cannot guarantee that we shall one day be first, we can guarantee that any failure to make this effort will make us last. We go into space because whatever mankind must undertake, free men must fully share.

It is a most important decision that we make as a nation... No one can predict with certainty what the ultimate meaning will be of mastery of space.

I believe we should go to the moon. But I think every citizen of this country as well as the Members of the Congress should consider the matter carefully in making their judgment... because it is a heavy burden.

This decision demands a major national commitment of scientific and technical manpower, material and facilities, and the possibility of their diversion from other important activities where they are already thinly spread. It means a degree of dedication, organization and discipline which have not always characterized our research and development efforts. It means

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we cannot afford undue work stoppages, inflated costs of material or talent, wasteful interagency rivalries, or a high turnover of key personnel

New objectives and new money cannot solve these problems. They could in fact, aggravate them further—unless every scientist, every engineer, every serviceman, every technician, contractor, and civil servant gives his personal pledge that this nation will move forward, with the full speed of freedom, in the exciting adventure of space" (*JFK, Special Message to Congress*).

In a later speech by President Kennedy on September 12, 1962 at Rice University, he explains in more candid detail, which further reinforces his vision:

"The exploration of space will go ahead, whether we join in it or not, and it is one of the great adventures of all time, and no nation which expects to be the leader of other nations can expect to stay behind in the race for space.

For the eyes of the world now look into space, to the moon and to the planets beyond, and we have vowed that we shall not see it governed by a hostile flag of conquest, but by a banner of freedom and peace. We have vowed that we shall not see space filled with weapons of mass destruction, but with instruments of knowledge and understanding.

For space science, like nuclear science and all technology, has no conscience of its own. Whether it will become a force for good or ill depends on man, and only if the United States occupies a position of pre-eminence can we help decided whether this new

ocean will be a sea of peace or a new terrifying theater of war.

And finally, the space effort itself, while still in its infancy, has already created a great number of new companies, and tens of thousands of new jobs.

Space expenditures will soon rise some more, from 40 cents per person per week to more than 50 cents a week for every man, woman and child in the United States, for we have given this program a high national priority—even though I realize that this is in some measure an act of faith and vision, for we do not now know what benefits await us. But if I were to say, my fellow citizens, that we shall send to the moon, 240,000 miles away from the control station in Houston, a giant rocket more than 300 feet tall, the length of this football field, made of new metal alloys, some of which have not yet been invented, capable of standing heat and stresses several times more than have ever been experienced, fitted together with a precision better than the finest watch, carrying all the equipment needed for propulsion, guidance, control, communications, food and survival, on an untried mission, to an unknown celestial body, and then return it safely to earth, re-entering the atmosphere at speeds of over 25,000 miles per hour, causing heat about half that of the temperature of the sun—almost as hot as it is here today—and do all this, and do it right, and do it first before this decade is out—then we must be bold.

Well, space is there, and we're going to climb it, and the moon and the planets are there, and new hopes for knowledge and peace are there. And, therefore, as we set sail we ask God's blessing on the most hazardous and dangerous and greatest adventure on which

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man has ever embarked" (*JFK, Address at Rice University*).

President Kennedy's vision of reaching the moon was fulfilled. The United States emerged as the leader in the global space race, with the support of hundreds of thousands of individuals working in the background, with their families, neighbors and the rest of the nation and the world watching. He led them on the ultimate adventure of space exploration, filled with unknown dangers and new technology. He left behind a legacy of American pride and innovation, with a profound influence and lasting impression on the Apollo Generation, destined to be carried forward.

Of course, there were detractors, critics and non-believers. This was to be expected—we'll talk about naysayers in later chapters.

For further discussion:

1. What are your thoughts after reading the memo from Vice President Johnson?
2. What do you observe in the photo of President Kennedy watching Alan Shepard's space flight?
3. Have you previously listened to, or read in its entirety, either one (or both) of President Kennedy's speeches? What are your thoughts (then and now)?
4. What do you think about the critics and arguments against the space program?