

How JFK Mobilized The U.S. for Recovery

by Marsha Freeman

The leading faction of the Democratic Party is now poised not only to rid the United States of the Cheney/Bush Administration political dictatorship, but to overthrow 40 years of failed and self-destructive policies that have turned the U.S. economy into a heap of rust. In this effort, Rep. Nancy Pelosi (D-Calif.) and others have invoked the Apollo program of President John F. Kennedy as the model which should be followed.

But most Americans don't really understand what Kennedy's program was about. Although the Apollo mission was put forward in response to the world's first manned space flight of Soviet cosmonaut Yuri Gagarin, it became the centerpiece of Kennedy's more comprehensive plan to move into the decade of the 1960s with a vision of the future based on a economic policy of growth.

Many of President Kennedy's initiatives were not implemented. Although he stated his policies in numerous speeches before the American people, many were not enacted into law by the Congress. Nearly his entire cabinet, including science advisor Jerome Weisner, opposed the Apollo program, which went forward only because both Kennedy and Vice President Lyndon Johnson were personally committed to it.

However one might evaluate the final outcome of President Kennedy's less than three years in office, in terms of foreign and defense policy, and overall domestic programs, *this nation lived off the technological science driver of Kennedy's Apollo program investment for more than 20 years.*

Since John F. Kennedy, no President has understood that budget deficits are only remedied through economic expansion and growth, and not by cutbacks in Federal spending, tax increases, austerity, or selling off government assets to the private sector. Most Presidents since the early 1960s have insisted that this country could not have a strong defense and

at the same time make the necessary infrastructure investments for economic growth.

Taken to its extreme, as early as President Kennedy's second year in office, RAND Corporation policymaker James Rodney Schlesinger wrote that national security and economic growth had actually become "decoupled," and that it did not matter whether the U.S. economy produced anything.

For the Democratic Party to invoke the policies of Presi-



John F. Kennedy Library

President Kennedy, at Cape Canaveral in February 1962, peers into the space capsule Friendship 7, in which John Glenn (just behind Kennedy) became the first American to orbit the Earth.

dent Kennedy today requires not only a reference to his program to land a man on the Moon, but also to his broader program of scientific and technological investment, and the economic expansion his policies embraced. For Kennedy, the economic and social problems of the nation were formidable, as they are today.

The Question of Leadership

When President Kennedy took office in January 1961, this nation faced domestic, foreign policy, economic, and military crises. In his State of the Union Message, delivered on Jan. 29, 1961, Kennedy summarized the situation:

The present state of our economy is disturbing. We take office in the wake of seven months of recession, three and one-half years of slack, seven years of diminished economic growth, and nine years of falling farm income.

Business bankruptcies have reached their highest level since the Great Depression. Since 1951 farm income has been squeezed down by 25 percent. Save for a brief period in 1958, insured unemployment is at the highest peak in our history. Of some five and one-half million Americans who are without jobs, more than one million have been searching for work for more than four months. And during each month, some 150,000 workers are exhausting their already meager jobless benefit rights. . . .

Our cities are being engulfed in squalor. . . . We still have 25 million Americans living in substandard homes. . . . Our classrooms contain two million more children than they can properly have room for, taught by ninety thousand teachers not properly qualified to teach. One third of our most promising high school graduates are financially unable to continue the development of their talents. . . . We lack the scientists, the engineers, and the teachers our world obligations require. We have neglected oceanography, saline water conversion, and the basic research that lies at the root of all progress. . . .

Medical research has achieved new wonders, but these wonders are too often beyond the reach of too many people, owing to a lack of income (particularly among the aged), a lack of hospital beds, a lack of nursing homes and a lack of doctors and dentists. . . .

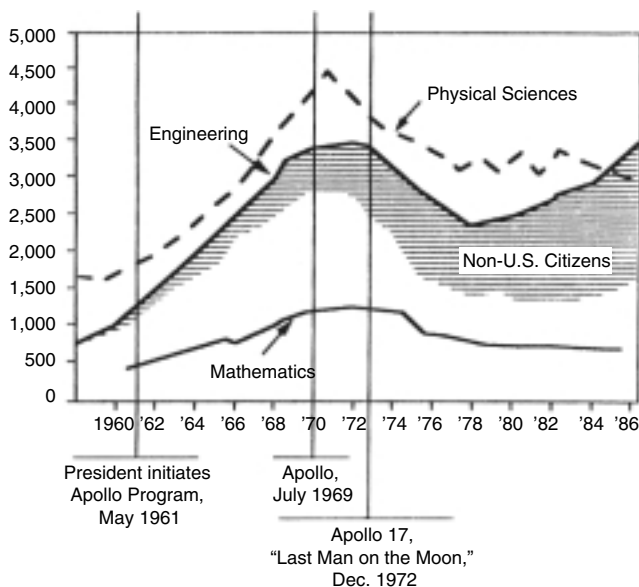
The denial of constitutional rights to some of our fellow Americans on account of race, at the ballot box and elsewhere, disturbs the national conscience, and subjects us to the charge of world opinion that our democracy is not equal to the high promise of our heritage.

Kennedy continued: "To meet this array of challenges, to fulfill the role we cannot avoid on the world scene, we must re-examine and revise our whole arsenal of tools: military,

FIGURE 1

Science and Engineering Doctorates (1960-86)

(Number of Degrees)



Source: NASA.

The Kennedy program inspired a renaissance in science and engineering education, as evidenced by the rapid growth of U.S. doctorates granted for both citizens and non-citizens, in parallel with funding for NASA.

economic, and political.”

This arsenal included an array of specific proposals and legislative initiatives, the most important and long-lasting of which was the space program. But without the investment tax credit program, tax cuts to encourage investment and savings, the upgrading of education, the investment in water and energy infrastructure and medical care, and programs to integrate minorities into the mainstream of economic opportunity, this program would not have had the impact it did, or be cited today as the policy precedent for the Democratic Party.

‘Landing a Man on the Moon . . .’

One month after Yuri Gagarin became the first man to orbit the Earth, and days after the failed Bay of Pigs invasion of Cuba, President Kennedy gave a Special Message to the Congress on Urgent National Needs. On May 25, 1961, five months after his State of the Union message, Kennedy stated:

If we are to win the battle that is now going on around the world between freedom and tyranny, the dramatic achievements in space which occurred in recent weeks should have made clear to us all, as did the Sputnik in 1957, the impact of this adventure on the minds of men everywhere, who are attempting to make a determination of which road they should take.

Since early in my term, our efforts in space have been under review. With the advice of the Vice President, who is chairman of the National Space Council, we have examined where we are strong and where we are not, where we may succeed and where we may not. Now it is time to take longer strides, time for a great new American enterprise, time for this nation to take a clearly leading role in space achievement, which in many ways hold the key to our future on Earth.

I believe we possess all the resources and talents necessary. But the facts of the matter are that we have never made the national decisions or marshaled the national resources required for such leadership. We have never specified long-range goals on an urgent time schedule, or marshaled our resources and our time so as to insure their fulfillment.

But this is not merely a race. Space is open to us now; and our eagerness to share its meaning is not governed by the efforts of others. We go into space because whatever mankind must undertake, free men must fully share.

Therefore I ask the Congress, above and beyond the increases I have earlier requested for space activities, to provide the funds which are needed to meet the following national goals:

First, I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the Moon and returning him safely to Earth. No single space project in this period will be more impressive to mankind, or more important for the long-range exploration of space; and none will be so difficult or expensive to accomplish. . . .

The President also proposed additional funds for unmanned planetary exploration, to accelerate development of the Rover nuclear rocket to go beyond the Moon, to accelerate the use of satellites for worldwide communications, and the development of a satellite system for worldwide weather observation. He said:

Let it be clear—and this is a judgment which the Members of Congress must finally make—let it be clear that I am asking the Congress and the country to accept a firm commitment to a new course of action, a course which will last for many years and carry very heavy costs of \$531 million in fiscal 1962, an estimated \$7 billion to \$9 billion additional over the next five years. If we are to go only halfway, or reduce our sights in the face of difficulty, in my judgment it would be better not to go at all. . . .

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.

At the time this speech was made, more than half of the American public was opposed to a lunar landing effort, according to polls, and in the White House, only Vice President Johnson was an enthusiastic supporter. But Kennedy believed that under his leadership, the nation could be mobilized to support the goals he outlined.

A Cultural Paradigm Shift

Very quickly, in response to the space initiative, the national outlook of this country shifted. In a book published in 1964, author Tom Alexander wrote: “[A] curious breed of individual seems to be making a place for himself in this ordeal of emerging from the pupal state into the space age. This is the man who, technically speaking, appears to be willing or able to think more than ten years ahead. A few years ago, people of his type were called crackpots. . . .

“Terraforming planets is a topic of discussion among the less inhibited Washington space policy men nowadays,” Alexander reported.

Kennedy knew that his direct attention to the progress of the Apollo program would be required to keep the effort on schedule, and not-hamstrung financially by the Congress.

Kennedy’s second major space policy address was at Rice University on Sept. 12, 1962. There he stated:

Those who came before us made certain that this country rode the first waves of the industrial revolution, the first waves of modern invention, and the first wave of nuclear power, and this generation does not intend to founder in the backwash of the coming age of space. We mean to be part of it. We mean to lead it, for the eyes of the world now look into space, to the Moon and to the planets and 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.

Yet the vows of this nation can only be fulfilled if we in this nation are first, and therefore we intend to be first. In short, our leadership in science and industry, our hopes for peace and security, our obligations to ourselves as well as others, all require us to make this effort, to solve these mysteries, to solve them for the good of all men, and to become the world’s leading space-faring nation. . . .

But why, some say, the Moon? Why choose this as our goal? And they may well ask, why climb the highest mountain? Why, thirty-five years ago, fly the Atlantic?

We choose to go to the Moon. We choose to go to the Moon in this decade, and do the other things, not



NASA

"We choose to go to the Moon"! President Kennedy here at a visit in 1962 to NASA's Manned Spacecraft Center in Houston. He is holding a model of the command module of the Apollo lunar spacecraft, and behind him is a lunar module display. Vice President Johnson is at right.

because they are easy but because they are hard; because that goal will serve to organize and measure the best of our energies and skills; because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one which we intend to win. . . .

The growth of our science and education will be enriched by new knowledge of our universe and environment, by new techniques of learning and mapping and observation, by new tools and computers for industry, medicine, the home as well as the school. . . .

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 and related industries are generating new demands in investment and skilled personnel. . . .

To be sure, all this costs us all a good deal of money. This year's space budget is three times what it was in January 1961, and it is greater than the space budget of the previous eight years combined. That budget now stands at \$5.4 billion a year—a staggering sum, though somewhat less than we pay for cigarettes and cigars

every year. Space expenditures will soon rise some more, from forty cents per person per week to more than fifty 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 three hundred 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 time 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. . . .

The economic impact of the five-year gear-up of the Apollo program is well documented. More than 400,000 highly skilled jobs were created in industry. Most of the engineers and doctors of science who graduated in the 1960s were directly or indirectly supported by NASA. The technologies transferred from space to the national economy were largely responsible for whatever increases in productivity there were in industry, commerce, and the home, for over 20 years. And developing nations saw that their lives could be dramatically improved through the use of satellites for communications, Earth remote sensing, health, and education.

But Kennedy knew that the results of years of economic decay and stagnation, had also to be addressed, in parallel with the gear-up of the space program.

American System Economics

Less than three weeks after his inauguration, Kennedy gave a Message to the Congress on Economic Recovery and Growth. In it he stated:

The potential of the American economy is constantly expanding. The labor force is rising by 1.5 percent per year. Output per man rises annually by 2 percent as a result of new and better plant and equipment, modern technology, and improved human skills. These increases in manpower and productivity provide the base for a potential annual growth of 3.5 per cent in the nation's total output. This is not high enough. Our po-



NASA

The five-year gear-up for the Apollo program created more than 400,000 skilled jobs in industry. Here, technicians make final adjustments to the Pioneer spacecraft which travelled to Jupiter and took the first close-up look at the planet.

tential growth rate can and should be increased. To do so, we propose to expand the nation's investments in physical and human resources, and in science and technology. . . .

An unbalanced economy does not produce a balanced budget. The Treasury's pocketbook suffers when the economy performs poorly. Lower incomes earned by households and corporations are reflected in lower Federal tax receipts. Assistance to unemployed workers and the costs of other measures for alleviation of economic distress are certain to rise as business declines. . . .

One key to the Kennedy plan to get the idle factories open and encourage investment in new basic industry was a series of tax measures. On April 20, 1961, he presented his basic program to the legislators on "Tax Incentives on the Federal Tax System":

The history of our economy has been one of rising productivity, based on improvements in skills, advances in technology, and a growing supply of more efficient

tools and equipment. This rise has been reflected in rising wages and standards of living for our workers, as well as a healthy rate of growth for the economy as a whole. It has also been the foundation of our leadership in world markets, even as we enjoyed the highest wage rates in the world.

Today, as we face serious pressure on our balance of payments position, we must give special attention to the modernization of our plant and equipment. . . . If our own goods are to compete with foreign goods in price and quality, both at home and abroad, we shall need the most efficient plant and equipment. . . .

Additional expenditures on plant and equipment will immediately create more jobs in the construction, lumber, steel, cement, machinery, and other related capital-goods industries. The staffing of these new plants, and filling the orders for new export markets, will require additional employees. The additional wages of these workers will help create still more jobs in consumer goods and service industries. The increase in jobs resulting from a full year's operation of such an incentive is estimated at about half a million. . . .

President Kennedy recommended a tax credit to businesses undertaking new capital investment expenditures, and nine other tax measures, which were *not* passed by the Congress. One year later, in his second State of the Union address, Kennedy urged, once again, that the Congress pass his "8 percent tax credit for investment in machinery and equipment, which, combined with planned revisions of depreciation allowances, will spur our modernization, our growth and our ability to compete abroad."

In early 1961, the President presented a Special Message on Natural Resources to the Congress, outlining his programs in water and electric power development, stressing the research, development, and application of emerging technologies:

No water resources program is of greater long-range importance, for relief not only of our shortages, but for arid nations the world over, than our efforts to find an effective and economical way to convert water from the world's greatest, cheapest natural resources, our oceans, into water fit for consumption in the home and by industry. Such a breakthrough would end bitter struggles between neighbors, states, and nations, and bring new hope for millions who live out their lives in dire shortages of usable water and all its physical and economic blessings, though living on the edge of a great body of water throughout a parched lifetime.

This Administration is currently engaged in redoubled efforts to select the most promising approaches to economical desalination of ocean and brackish waters, and the focus our energies more intensively on those



NASA

Kennedy knew that nuclear power development was key to economic growth. Here he has fun using the “mechanical hands” of a remote manipulating device used in work on a nuclear reactor, at the Nuclear Rocket Development Station in Nevada. Looking on (left) is a technician for ACF Industries, Inc. which did the assembly work on nuclear reactors in the facility. At Kennedy’s right is Dr. Glenn T. Seaborg, chairman of the U.S. Atomic Energy Commission.

approaches. . . . I now pledge that, when this know-how is achieved, it will immediately be made available to every nation in the world who wishes it, along with appropriate technical and other assistance for its use. . . .

The President continued:

To keep pace with the growth of our economy and national defense requirements, expansion of this nation’s power facilities will require intensive effort by all segments of our power industry.

Our efforts to achieve economically competitive nuclear power before the end of this decade in areas where fossil fuel costs are high will be encouraged through basic research, engineering developments, and construction of various prototype and full-scale reactors by the Atomic Energy Commission in cooperation with industry. . . .

In this speech, Kennedy announced he was rejecting a “no new starts” policy on water-resources and flood-control projects, and was requesting appropriate department and agency heads to schedule an orderly program of such projects.

It was clear that Kennedy’s programs could not go forward without an upgrading of education, and that the driver to make those improvements would be, in particular, the goals he had set for the nation in space.

The Human Requirements

In a Special Message to the Congress on Education, delivered on Feb. 20, 1961, Kennedy stated:

Our progress as a nation can be no swifter than our progress in education. Our requirements for world leadership, our hopes for economic growth, and the demands of citizenship itself in an era such as this all require the maximum development of every young American’s capacity.

The human mind is our fundamental resource. A balanced Federal program must go well beyond incentives for investment in plant and equipment. It must include equally determined measures to invest in human beings, both in their basic education and training and in their more advanced preparation for professional work. . . .

Too many classrooms are overcrowded. Too many teachers are underpaid. Too many talented individuals cannot afford the benefits of higher education. Too many academic institutions cannot afford the cost of, or find room for, the growing numbers of students seeking admission. . . .

To Kennedy, it was important that long-term, affordable health care be available to the infirm and elderly of the nation, and that there be a vigorous immunization effort to protect the young from childhood diseases. In a Special Message to



U.S. Department of Agriculture

"Our progress as a nation can be no swifter than our progress in education." Here, students at a two-room school in Hurricane Gap, Kentucky in 1966.

the Congress on Health and Hospital Care, on Feb. 9, 1961, Kennedy referred back to FDR's policies and stated:

Twenty-six years ago this nation adopted the principle that every member of the labor force and his family should be insured against the haunting fear of loss of income caused by retirement, death, or unemployment. To that we have added insurance against the economic loss caused by disability.

But there remains a significant gap that denies to all but those with the highest incomes a full measure of security: the high cost of ill health in old age. One out of five aged couples drawing Social Security benefits must go to the hospital each year. Half of those going to hospitals incur bills in excess of \$7,000 a year. This is over one-third of the total annual income of a typical couple, more than a modest food budget for an entire year. Many simply do not obtain and cannot afford the care they need.

In addition to outlining guaranteed health care for hospitalization, skilled nursing home services, and hospital outpatient clinic diagnostic services, Kennedy recommended Federal scholarships for medical and dental students and cost-of-education grants to the schools they attend; matching grants for construction, expansion or restoration of medical and dental schools to increase their capacities; funds for construction of nursing homes and the improvement of nursing home and home-nursing services; increased funds for medical research

and construction grants for medical research facilities and experimental or demonstration hospitals; establishment of a National Institute of Child Health and Human Development; and, increased appropriations for the Maternal and Child Health, Crippled Children, and Child Welfare programs of the Children's Bureau.

When President Kennedy was assassinated, the United States was mobilized to put a man on the Moon, and reorganize a significant part of the U.S. economy to accomplish it. By the time Neil Armstrong landed on the Moon in July 1969, the optimism of the early 1960s, and the Presidency of Kennedy's successor, Lyndon Johnson, had been destroyed.

'Mr. Space'

Today Lyndon Johnson is often identified with the disastrous Vietnam War and the failed Great Society programs. But less well known is the fact that the existence of a civilian space program in the United States since 1958 is in large part the result of Johnson's efforts.

When Sputnik made its debut on Oct. 4, 1957, Johnson was the majority leader of the Senate and chairman of the Senate Armed Services Subcommittee on Preparedness. Johnson took the lead in investigating this "satellite gap" after the Eisenhower Administration's disappointing response to the Soviet challenge. In November 1957, Johnson's subcommittee began hearings on the Soviet threat and the U.S. military's plans for space. No less than 2,376 pages of testimony were recorded, including statements by Drs. Edward Teller and Wernher von Braun. Teller advocated a trip to the Moon

as a response to the Soviet lead in space, and von Braun expressed his support for developing the large rockets to take men there.

The subcommittee agreed without dissent that higher priority should be given to satellites, that they served both military and scientific purposes, and that there had to be greater emphasis on scientific and technological education. Johnson introduced Senate Resolution 256, creating the Special Committee on Space and Astronautics, and he was elected chairman of the committee as the major Congressional spokesman on space policy issues.

Johnson and Eisenhower agreed that the exploration of space should reside in a civilian agency, and on April 2, 1958, President Eisenhower made this proposal to the Congress. On April 14, Johnson and House majority leader John W. McCormack introduced the legislation that would create the National Aeronautics and Space Administration (NASA).

Opening hearings before the Special Committee on the NASA bill on May 6, 1958, chairman Johnson stated:

Space affects all of us and all that we do, in our private lives, in our business, in our education, and in our Government. . . . We shall succeed or fail [depending on] our . . . success at incorporating the exploration and utilization of space into all aspects of our society and the enrichment of all phases of our life on this Earth.

President Eisenhower signed the bill creating NASA on July 29.

Senator Johnson appealed directly to young people, as well as to the nation as a whole, to support this grand project. As he told the Junior Chamber of Commerce in Wichita Falls, Tex., on Nov. 29, 1957:

When I was a small boy, the idea of space ships and rockets to the Moon represented an evening's entertainment by the fireplace. It was a dream—an escape from the ordinary affairs of an ordinary world.

Now these dreams are becoming realities—something that is right in front of us and that most of us will see. Flights to the Moon are just over the threshold, flights to Mars and the planets are but a hop, skip, and a jump away.

The next month in a speech in Dallas, Johnson outlined a mobilization that would require the participation of “workers, farmers, professors, technicians, and businessmen. . . . There is only one type of person we can do without,” he concluded, “And that is the man or woman who says: ‘It cannot be done.’ ”

From the beginning of his administration, President Kennedy depended upon Vice President Johnson for guidance on space policy. The newly enacted NASA law was changed upon Kennedy's request to allow the Vice President, instead

of the President, to be head of the National Aeronautics and Space Council. Johnson was key in bringing experienced government manager James E. Webb to the NASA administrator's post and encouraging Webb to lobby for significant increases in the NASA budget.

While the President was deciding how quickly to accelerate space programs, Soviet astronaut Yuri Gagarin made man's first venture into Earth orbit on April 12. A week later, the failed Bay of Pigs invasion added new urgency for a positive initiative from the Administration. In an April 20 memorandum requesting a survey of “where we stand in space,” Kennedy asked Johnson to assess America's chances of beating the Soviets.

Johnson consulted space experts, as well as business, military, and civic leaders in an attempt to build a broad consensus for a lunar program. Upon Johnson's recommendation, President Kennedy announced the Apollo mission on May 25, 1961.

Apollo and Our Mission Today

America's entrance into the Space Age demonstrated that the dramatic increase in the global potential population density from the Renaissance to Sputnik and beyond was based on successive revolutions in scientific discovery and technological applications in the economy, which, in turn, were based on the fact that the mind is not finite.

The Apollo Project changed this nation. It has been estimated that nearly half of the people on Earth knew about America's Moon landing, as it was happening. For the 600 million people (about one fifth of the world's population at that time), who watched Neil Armstrong's first small step on the Moon on television, it was the finest hour for America.

The crowd at Cape Canaveral on the morning of the launch of Apollo 11 on July 16, 1969, has been estimated at 1 million. In the grandstand was a crowd of 20,000 people, including 3,500 reporters and photographers, from 56 nations of the world.

But the nation had changed. Lyndon Johnson, “Mr. Space,” had left the White House in disgust just a few months earlier. He took no part in the celebrations. By July 1969, President Kennedy's brother, Edward, had called for cuts in the already decimated NASA budget, so that more funds could be spent on Federal “anti-poverty” programs.

Today, three decades of precious time has been lost in the exploration of space. Four decades of destruction of the U.S. economy created the wreckage that exists today.

It is not difficult to invoke the name and memory of Franklin Roosevelt, or John F. Kennedy, as a shorthand to reference what needs to be done today. But to carry out that mission today requires understanding the breadth of the Apollo mission as Kennedy so eloquently defined it. With that understanding, the Democratic Party can claim itself to be the party of FDR and John F. Kennedy.