

SPEECH BY VICE PRESIDENT HUBERT H. HUMPHREY

Robert H. Goddard Memorial Dinner

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As many of you know, just as soon as I became Vice President, my space problems started. First, there was my home. People said it was too small. But I refused to move.

Then there was my office. My former Senate colleagues, sentimental to the end, decided that my office as Vice President was too large. That time I moved -- one of the rare occasions in American history when anyone expanded into smaller quarters.

Honestly, getting the Gemini into orbit is nothing compared to getting a Vice President settled down.

Then the President said, "Hubert, you better forget about office space, and start worrying about outer space."

Many of you apparently have wondered precisely what kind of chairman of the National Aeronautics and Space Council I will be.

That, at least, is the word I get along a non-electronic grapevine.

Of course, there could be no more appropriate place than at this dinner honoring Robert Goddard, the father of our space program, for a new NASC chairman to present his views.

We are all greatly in Dr. Goddard's debt. The way of space is the way of the pioneer -- it is the way of the builder. And Robert Goddard was a pioneer and a builder -- a true visionary.

Robert Goddard said, "Every vision is a joke until the first man accomplishes it." Well, we have seen some of the results of Robert Goddard's vision, and it is no longer a joke, but a magnificent reality.

Each of you has a long-standing, deep interest in this reality -- in our national aeronautics and space programs.

President Lyndon Johnson, both as Senator and as Vice President, provided strong, persistent, and visionary leadership and support. He will continue to do so.

And I intend to continue, as best I can, that Lyndon Johnson tradition. That is the kind of chairman I hope to be.

I am an advocate of a dynamic space program -- a program which will succeed in reaching the goals we have set -- and one which will set new goals -- one that can see beyond the moon and into fields where we can only speculate about the knowledge awaiting us.

And I can promise you this will not be an advocacy simply of formal duty and responsibility. What I have learned of our space and aeronautics programs has made me an enthusiastic advocate.

It has also made me an eager student. I don't expect to become an "instant expert," but I do intend to learn by study and asking many questions.

I want to know if we are going to reach the goals set for this program by President Johnson and by our late President John Kennedy. Or has there been slippage? If there has been, why did it happen?

Is there unnecessary duplication of space efforts? Or, is there inadequate teamwork and faulty interfacing of information between agencies and between government and industry?

If we aren't doing what we should, I shall want to know why not. If the fault lies with an apathetic people forgetting the value of our space efforts, I will carry the message of the program to them.

If the fault rests with the Congress cutting back for cutting alone, I hope to be able to help there.

And if it appears that in government or in industry, there is weak administration, casual technology, sloppy or wasteful work, then together, all of us must act.

This is the kind of role I have tried to play during the 16 years I spent in the Senate working for good education -- for better health and welfare programs -- for urgently needed civil rights legislation. It is my role today as we work for the Great Society.

Let me assure you that the Great Society envisioned by President Lyndon Johnson is not one limited to the fight against poverty, ignorance, disease, and intolerance. The Great Society requires, in addition, an urgent quest for excellence, for intellectual attainment, for crossing new frontiers in science and technology.

Let me emphasize that an adequately funded, well-directed space program is an integral part of our nation's commitment to its future, to its greatness.

As one who has been an advocate of domestic programs which do cost money and which are not yet finished -- who knows that much remains to be done and knows how expensive it will be -- I have been asked how strongly I support the space program which, according to some, will take billions of dollars away from other useful programs during the next decade.

This strong and prosperous economy permits us to do many things and to do them well. We can put a man on the moon at the same time as we help to put a man on his feet. We conquer outer space even as we conquer poverty.

I do not consider our domestic needs to be competitive with our space needs -- any more than I consider them to be competitive with our national defense requirements. We can afford to do what is needed in space, in general welfare, and for our national defense.

Are we spending too much on Space -- and not enough on problems associated with our own planet? Both, it should be obvious, are bound together.

It is not a question of space or social welfare.

It is not the moon or medicare.

It is not Apollo or education.

It isn't Pegasus or poverty programs.

It isn't launch pads or highways.

We can and must do all these things. Our rich and dynamic nation -- growing richer every day -- can afford all of these things. Our space dollars need not -- and will not -- deprive, starve or decimate any other useful programs.

One reason why I do support our space efforts strongly^{ly} has to do with what might be called its social and economic spin-off. Let's just look at one domestic program -- education.

The spin-off from the space program in education has been tremendous.

Since its beginnings in 1958, the space program has served as a spring tonic to the American education system. It has done this from the grade school through the post-graduate university.

It has challenged -- and it will challenge increasingly -- our finest and most creative minds to the solution of new, vital, and complex tasks.

The exploration of space represents the "frontier of our times" which either this country or another will explore.

Aside from the physical frontier of space, it also represents a frontier of technology and knowledge -- an unending quest for new materials, improved techniques, more skilled scientists and engineers, better technicians and managers. Possibly the one most precious resource in this conquest is that of highly trained and dedicated people which it has attracted and developed.

And, our American schools have risen to the space challenge. In the grade schools and high schools, science courses have been modernized and new ones added. New textbooks have been written. Science teachers have been attending refresher courses to keep pace with rapid scientific advances.

The most gifted of our students are encouraged to expand their talents by means of scholarships and other assistance. Through the National Defense Education Act, which was passed in 1958, after Sputnik I, over 50,000 gifted science students have benefited from loans and fellowships.

NASA-supports universities throughout the country in training space-oriented scientists and engineers; in building laboratories; in conducting space-aeronautics research.

Currently, almost 2000 Ph. D's are in NASA-supported training at 131 colleges and universities. Soon these programs will exist in 142 institutions and cover every one of our fifty states. And consider the diffusion of knowledge resulting from such a program.

We are training advanced scholars in such diverse fields as astronomy, physics, metallurgy and chemistry -- to name just a few.

If the space program had no other side effect beyond what it has done for education in the United States, it would be worth it. But, obviously, education is not the only field where benefits can be measured.

Resources devoted to space progress create more resources for many, many other purposes. In medical research, in the biological sciences, in our earth sciences as well as in the life sciences, our space program has brought vast gain to our nation and our people. It will continue to do so.

And our space programs have already demonstrated their usefulness in direct, practical, and peaceful ways. President Johnson reminded me recently of a

speech he made about two years ago, indicating that the Weather Bureau predicts the following savings, based on accurate weather prediction just five days in advance.

We will save two and one half billion dollars a year in agriculture, 45 million dollars in the lumber industry, 100 million in surface transportation; 75 million dollars in retail marketing; and 3 billion dollars in water resources management.

As the result of the competence of our weather satellites, we are already providing the nations of the world timely warnings on a global basis.

Certainly, too, we have much to gain from the accomplishments in communications.

Here again our system of private capital and government sponsored research has helped to tie the world community closer together through communications satellites.

And our space program has provided great stimulation to our economic and technological growth. After all, every dime of our space money is spent right here on earth. So far, there are no subcontractors on the moon.

The space program has meant profits, jobs, economic growth. In the last six months of 1964, the Department of Defense alone spent over 5 billion dollars on missile and space systems and aircraft. DOD spent in contract awards for experimental, developmental, test and research work in missile space work almost 3 billion dollars.

The space program has meant jobs too. As you know, there have been 300,000 men and women employed on the Apollo program alone.

It has infused our economy with new life. It has founded new research, it has developed hardware and constructed laboratories and other useful facilities.

And I want to underscore an undeniable fact of this infusion -- the teamwork between our privately financed and privately run companies on the one hand and the Federal Government on the other is one of the major sources of strength of the whole national space program. In fact, it is basic to the strength of this great country.

By the year 2000 this country will be even greater -- quantitatively as well as qualitatively. Our population will have doubled. I checked with the Census Bureau yesterday and they tell me there will be 361,947,000 people then -- 90% in cities, 40% along our seaboards.

And to meet the needs of that population, our country cannot stand still. Our economy -- a continued and strengthened partnership economy -- must not stand still. And if the economy must grow rapidly, our technology cannot

pause or stop. We are still a developing nation -- our future is unlimited.

But, even if we could not tonight point to a single immediate dollar return from the space program, we must continue -- for that is man's history, as well as our destiny.

The pace of scientific discovery has increased. Only 39 years ago this month, knowledge and intelligence conspired within an American pioneer named Robert Goddard and we had a liquid fuel rocket.

Sudden ly, in these few short years, man now moves at speeds 400⁰ times faster than his own legs can carry him. And in Colonel John Glenn, who is here with us tonight, we have a man who has already done this.

Thus we have seen in our own lifetime the world move from horsepower in its literal sense to men thrust into orbit about the earth. Who wishes to stop there? Not America. Not its people or its President. Not any man or woman in this room.

As Chairman of the Space Council, I do not intend to oversee the slowing down of our pace. I do not intend to witness the diminishing of our efforts.

If we were the only nation engaged in a space program, it would still be in our best self-interest to increase our efforts.

But, of course, we are not the only nation exploring outer space. This week's news from the Soviet Union should emphasize what we have already known well. The Soviets are investing great energy, vast resources, and know-how with great success in their space program.

Our military security rests on the same advanced research and technology as the space program. If we ever face a major confrontation with our enemies -- whoever they may be -- it will be in terms of Winston Churchill's "Wizard War."

If we are not strong in "wizard warfare," we are doomed.

Our national security alone would suggest reason enough for us to strive for absolute leadership in space exploration.

Wherever we stand, we cannot stand still.

Each time we pause, we have had a shock from the Soviet efforts in space -- from Sputnik in 1958 to the man in a space suit yesterday.

We can and do salute the Russian achievements! We can and do admire Russian science and technology. We can and do hope for totally peaceful uses of outer space. We can and do demonstrate our eagerness to cooperate with everyone in this quest.

But, we would be foolish if we did not understand the military implications of Soviet space science, as well as our own.

Each Russian shock has produced action here. But a mature nation should not need shock treatment. We are a peaceful nation; we are a peace-loving people; but we would ignore the real interests of the free world if we diminished our military efforts in space.

That is why, even today, four great companies in the United States are competing in the design for a manned orbiting laboratory.

And even as we explore every responsible avenue for peacemaking and peace-keeping, we must ensure that our military space program receives its full measure of support.

Well, in the time I have been talking to you, John Glenn went a third of the way around the globe. I don't intend to keep you for a full orbit.

I simply want you all to know that I am determined to work hard on this space program -- for its intrinsic value as an intellectual search, for its domestic value as an economic goad for growth, as a pervasive stimulus for excellence, and, finally, for its importance to our military strength and the survival of free society.

Two years ago in a speech, I said, "This is a wonderful time in which to live. It challenges the best in us.

"It calls for doing the impossible -- performing miracles. Mediocrity must give way to excellence; timidity to daring, fear to courage.

"We dream of sending a man to the moon in this decade. We know that dream will be fulfilled only with sacrifice, a commitment, a plan and a program."

I am delighted to have made my "maiden voyage" into outer space speeches among those of you who have indicated by your actions, your willingness to do the impossible -- your commitment to excellence, daring, courage -- to a plan and a program which will make America a great society in a great, and explored, universe.

VICE PRESIDENT HUBERT HUMPHREY'S

SPEECH

(THE GODDARD DINNER)

Thank you very much Dr. Edward Welsh, this man of many surprises and unpredictable as to what will happen when he appears before an audience like this, and Ed, I might say that looking out over this magnificent audience, I can well understand why it is rather unpredictable what might happen because it surely is one to inspire you. First, may I say that I am very sorry that I didn't get to this dinner when it started and when the head table was introduced, when I would have had a chance to just look over this magnificent banquet hall and to see each and every one of you. I have had a rather very busy evening, as I was saying to Mrs. Goddard, to your President, you see I have to try a little harder than some -- I am only second you know. --

As I look about this room I not only see our friends the Reverend Clergy, but I notice the leaders of our Congress, and I am so pleased to see Congressman George Miller here and Howard Cannon and the leadership that I see out here before me I can't help but just take notice for a moment that the leaders of the majority of the House of Representatives is here - Carl Albert - and I know that here are the leaders of the American industries - the up and coming energetic imaginative industry - and the leaders in science. Our own

Dr. Glenn Seaborg is with us, who has distinguished himself, not only in private and academic life but as a public servant, and I want to commend him, and the others that are here from the Space Agency, the NASA and in the Department of Defense and then, of course, I didn't get a chance to shake his hand, or to really have a visit, but I know one of the great Americans is here tonight and one that we have heralded and one that we should continue to praise for the honor and that is Colonel John Glenn, and I am so pleased that he is with us. And I am particularly interested in finding that Peter Hackus has laryngitis - shouldn't happen to a nicer guy, I might add. Why, Peter that almost happened to me on the night in Atlantic City. Can you think of anything worse? Yes, only losing, that is all that could be worse -- I have been looking through hastily your wonderful program, and I know that you have had a great evening, and I was fascinated by the pictures, the portrayal of the achievements of recent days in the field of science and space accomplishments. It just makes you know that our living in the most exciting age of all times. And frankly, I like that kind of a climate in which to live. I have very little time for people that are grousing around, and complaining about the times in which we live - never been better - oh, once in a while, I run into some poor misguided

soul, who tells me about those good old days, and as a student of history, I have never found them. The best days are the ones we have now, and the only ones that will be better start tomorrow, and that is the way to look at it.

Well you know, as many of you do know, just as soon as I became Vice President, my space problem started - not the kind of space that Dr. Welsh is talking about, but first there was my home, people got interested in that. People said it was too small, but Muriel refused to move. Fine woman, that girl, I'll tell you - and by the way she was getting some advice from some rather high quarters I might add, too and then there was my office. Oh, my goodness, my office, oh, we had fun in Washington talking about the Vice President's office, that he thought ought to have, and my former Senate colleagues, beloved souls that they are, sentimental to the very end. Howard... they decided that my office as Vice President was far too large for a frugal and prudent administration. And that time, I bowed again to superior authority, and I moved - this is one of the rare occasions in American history where any one expanded into smaller quarters. No one Agency of Government has ever followed that precedent. Now honestly, getting the Gemini into orbit is really nothing

compared to getting a Vice President settled down, and before I forget it, it is my intention, in case I didn't announce it publicly, that I was to board a plane Monday night, and fly down to Cape Kennedy and be there for the launching of Gemini and my position as Chairman of the Space Council - so if any of you want to ride, see Ed Welsh. Now, this business of getting the Vice President settled down caused the President some concern - the President said to me one day: He said, "you, Hubert, you better forget about office space, and start worrying about outer space - and that is why I am here to night - now many of you have apparently been wondering precisely what kind of a Chairman of the National Aeronautics and Space Council that this new Vice President will be - well you have many reasons to be wondering - Well, at least, that is the word I get through from the non-electronic grapevine, the really accurate new services that you have - now, of course, there could be no more appropriate place than at this dinner, honoring this great distinguished scientist, Dr. Robert Goddard, the father of our space program - for the new - I have to use these initials, the NASC, Chairman to present his views - this is the problem place. I would hope that some of you might know of my views, because I served on

the Appropriation's Committee of the Senate of the United States, and for those that are doubters - you just take a look at the votes, you didn't have to wonder about the Senator from Minnesota, but you may have a worry or two about a few others. Now, we are greatly indebted to Dr. Goddard, you know it, and there is no need of one stressing that. It is just one of the facts of our history. The way of space is the way of the pioneer, this is why this program should be so fully American. We are such a pioneering people, we always have been and the way of space is the way of the adventurer, the way of the builder, and Robert Goddard was an adventurer, and what a persistent one he was, and he was a pioneer, and what a courageous one he was, and he was a builder, and what a sound builder, and was a true visionary. In fact, he was such a good visionary that he has permitted us to get out of this world once in a while. Robert Goddard said that every vision is a joke, until the first man accomplishes it. Well, we have seen some of the results of Robert Goddard's vision. And tonight it is no longer a joke, you witnessed on the screen, you know it in your own personal lives. His vision is now a magnificent reality. And each of you have had a long standing deep interest in this reality. There is little, or

or nothing, that I can say to you tonight that is new. All that I can do is to reiterate, reaffirm that in which we believe. You have had a long standing interest in our National Aeronautics and Space program, and for this I want to personally and publicly and officially thank you, because you are the heart and core of this space effort, now President Lyndon Johnson, both as a Senator and as Vice President provided strong and persistent, and visionary leadership and support for our space efforts. He was in truth the legislative father of the space program, and he trained and educated many of us to support that great effort. And just as he was the innovator and the initiator, may I say that you are very very fortunate, my fellow Americans, to have in the White House a President who not only is interested in our space efforts, but understands their importance and will continue his effective leadership for advancement in this very important field. I hope that I can continue in that Lyndon Johnson tradition, that is what I want to do.. I am one of the Senators that working with him, and I am very proud to say that he was my teacher, and I hope I learned well. This is the kind of a Chairman that I want to be. I want to walk in his footsteps. Now I am not just a

passive man, and as I said earlier, I am not much interested in the grippers. I am an advocate, and I am an advocate of a dynamic space program, an advocate of a program that will succeed in reaching the goals that we have set out for ourselves, and one which will even set new goals as we move along - and one that can see beyond the moon, and into the fields where we can only speculate about the wondrous world of knowledge awaiting us, and I can promise you that this will not be the advocacy simply based on the formality of duty and responsibility under the law. What I have learned about our space and aeronautics programs has made me an enthusiastic advocate. An advocate of the heart, as well as of the mind, and it is also this little that I learned thus far, has also made me an eager student, in fact I may be a little more eager about it, than some of you because it is so exciting and so new to me. Wherever I go, there it is nothing relating to space activities, whether it is research or whether it is industry, or whether it is one of our Government installations, I go there to talk to the people that are in charge. To visit them, to learn, to ask foolish questions - but I hope also to ask some penetrating questions. I know that I can't become an instant expert. Instant experts are rather dangerous - if you listen to them - but I do intend to learn, by study, by travel and

and by the questions. And I want to know that if we are going to reach the goals set for this program set by President Johnson, and by our late President John F. Kennedy, I want to know has there been any slippage, I want to know if there has been, why did it happen. That is my job. Is there unnecessary duplication of space efforts? Or is there inadequate teamwork, and faulty interfacing of information between agencies, and between Government and industry, and if we aren't doing what we should - and some people say we are not - I shall want to know why not, and if the fault lies with an apathetic and an indifferent citizenry, forgetting the bad use of our space efforts, I am going to do my best to carry the message of the value of this program to them, to arouse their interest. If the fault should rest with the Congress cutting back when it shouldn't, I hope with the cooperation of these distinguished leaders of the Congress that are here tonight, that I will be able to be of some help there. And I don't think the fault will be there. I can honestly say to you, I don't think you will have to worry about your Congress, if you will lay the facts on the table, if you deal up and above board with the Congress, having served there 16 years, if you can defend your case, you will get what you need, and what you ask for,

if you ask for what you need. Now if the fault appears to be in Government at the administrative level or in industry - if there is weak administration or casual technology and that has happened - sloppier wasteful work - then all of us, together, must act for the common interest and the public good. Now this is the kind of a role that I want to play, and it is the kind of a role, may I say, that I believe, I have tried to play during the 16 years that I have served in the U. S. Senate, working for many programs, working for good education, for better health and for welfare programs and for science. After all, I guess you can't call a druggist really a scientist, but you did have to learn a little bit about chemistry and a few things. I am interested in science. I am interested in the standards of science and the better performance of science. It is my role today to work for the Great Society, in every meaning of that term - just as I have worked in the past for Civil Rights, for the Peace Corps, for Foreign Aid, and many of the programs of this country. Now let me assure you that this Great Society envisioned by our President isn't one that is just limited to fighting against something, against poverty or illiteracy or disease or intolerance - that is part of it, but the Great Society requires, in addition, an urgent search,

a quest for excellence for the quality of life, as well as the quantity of it, for intellectual attainment for crossing new frontiers in science and technology. We are all very much a part of this great endeavor, and let me emphasize that an adequately funded, well-directed space program is an integral part of our Nation's commitment to the future, to its greatness. Your President knows it, your Executive Branch knows it and your Congress knows it. Now, as one who has been an advocate of domestic programs, which do cost money, and my goodness, I have been accused of wanting to spend a lot of it, and which are not yet furnished. Many of these programs only started, and one who knows that much remains to be done, and knows how expensive it will be, I have been asked how I could so strongly support the space program, which according to some will take billions of dollars away from other useful programs during the next decade, and this is the question that is put to us many times - what are your priorities? they say - how can you support a program for education or for Medicare, or for Conservation, or Urban development. How can you want to do these things, and then vote for support for space efforts to - you can't do both - we always have these people going around saying, you just can't do both, you have to make choices -

Now what is my answer to that. My answer is that this strong and prosperous economy, the likes of which this world has never known, nor have you ever known, to this hour, an economy that is in its 47th month of unbelievable growth and prosperity, that this economy permits us to do many things and to do them well. The only question that faces the American people, is the question of whether we have the will to do what we want to do. You know we have the means, we have more than half of all the means in the world. This Nation consumes over 50% of everything produced and processed in the world. So, my fellow Americans, I do not buy the argument that we cannot do these things because of lack of means. Anything that we fail to do is because of lack of decision or will. We can do what we want we want to do in any area of human endeavor that we set our minds to do it - if you are willing to do it, and willing to get busy and pay the price to get it done. We can put a man in the moon, and do it at the same time that we helped to put man on his feet on this earth. We can conquer outer space, even if we conquer poverty, and I do not consider our domestic needs to be competitive with our space needs, any more than I consider them to be competitive with our National Defense requirements, and by that I mean where you have to choose one or another. We can afford, as I have said before, to do what

is needed in space - we can afford what is needed to do in human welfare and we can afford to do what is needed to be done in National Defense - and no other Nation on the face of the earth can make that claim and prove it - WE CAN. This is the margin of difference between your American and somebody else, my dear friends - never forget that, even when there are amazing developments in the world. I ask - are we spending too much on space?, because people ask me this every day, and they ask you, and not enough on problems associated with our own planet. My answer is that both, it should be obvious, or bound together. It is not a question of space or social welfare - it is not the matter of moon or medicare, it is not a power or education - it is not pacifist, or poverty programs, and it isn't launch pads or highways. We can do all of these things. Our rich and dynamic Nation - it grows richer every day, can afford all of these. Our space dollars need not, and will not deprive, starve or despoil any other useful program and we need to understand that and those of you that are deeply involved in this program need to believe it, because it is true, and you need to tell your neighbors about it, because if you don't your space program is going to suffer. Now one reason why I do support our space efforts strongly has to do

with what you might call the social and economic benefits from it - the spin-off. Let's just look at it, on the domestic level - take a look at one area - Education. The greatest program of Federal Aid to Education ever conceived by the mind of man is due to our efforts in defense and space. The spin-off from the space program and education has been phenomenal. Since its beginnings in 1958 the space program has served as Spring tonic, like sulphur and molasses - you know - to the American Educational system. And it is done this from the grade school right up to the graduate university. It is challenged, and it continues to challenge our finest and most creative minds to the solution of new and vital and complex tasks. The exploration of space represents the frontier of our times, which, either this country or another will explore, and I wish there were as many space shows on TV as there are Westerns. Oh, yes - and it seems to me that the network that gets that message first, is the one that is really going to be dealing with the future. We taught every kid in America how to make the fast draw with the six-shooter, as if this was the America that was forever. It is a part of our heritage, and we can be proud of it, or at least we can say it was surely a part of once the history of this country,

but what about directing even our entertainment towards the challenges of tomorrow. Why, the youngsters, that I know are much more interested in exploring the universe than they are in Dodge City. And they don't all need Mickey Mouse either, they are pretty smart - too smart sometimes. Now aside from this physical frontier of space, which is a real frontier for us, it also represents a frontier of technology and knowledge, an unending quest for new materials, and the improved techniques, more skilled scientists and engineers better technicians and managers, possibly one of the most precious resources in this conquest is that of highly trained and dedicated people which it has attracted and developed. In our America schools, I am happy to say, in most instances have risen to this space challenge and with our new programs and education we will do better. You have a stake in this legislation. May I get my plug in right now. The best investment, and the wisest investment that this country will ever make in this year of 1965 is the dollar, or the dollars, or the millions, or the billions of dollars that you put in education. That is the source of our future power. Thank Goodness, that in our grade schools and in our high schools science courses have been modernized and new ones added.

Might I just digress to say that one day I found in the District of Columbia schools here a few years back - the science books were so up to date that they were talking about the possibilities of electrical refrigeration. Yes, that was 5 years ago, my dear friends, and the students came to my office and begged for somebody to listen to them. They had a picture of an airplane that by refueling once, it could cross the continent. It was an old tri-motor job - modern science, the atom bomb hadn't been mentioned in space, unheard of, you couldn't spell it in the Nation's capital - we changed that, but in many a school the libraries are inadequate, and you and I know it, and one of the things we have in this education bill of ours before the Congress is to put in those libraries modern books for modern children. And new text books have been written, sciences teachers have been attending refresher courses to keep pace with rapid scientific advances. The members of Congress that I see here tonight were authors of that National Defense Education Act, and I was one of those that co-sponsored it. These are things about which we can be somewhat humbly proud. Now the most gifted of our students are encouraged to expand their talents by means of scholarships and other assistance. After Sputnik I, in 1958, over 50,000 gifted students, science students, in America have benefited

from loans and fellowships. Most of these students wouldn't have been going into these fields without that help. NASA has supported universities throughout the country in training space oriented scientists and engineers - the Department of Defense has done the same thing, Atomic Energy, National Science Foundations, the National Institute of Health, building laboratories, conducting research, and in this instance, space and aeronautics research, and while many a dogmatist has been arguing about Federal Aid to education, some of us have just been slipping it through, year after year, and let them argue - I used to say, don't tell them what we are doing - if you tell them, it is Federal Aid they will be against it, but if they just get it this way, they love it. Currently almost 2,000 Ph.D's are in NASA supported training at 131 colleges and universities, and it is the Ph.D's that ultimately determine that extra margin of strength again in the intellectual scientist and technology life of this Nation. Soon these programs are going to be in 142 institutions, and cover everyone of our 50 states, just think what this means. We are training advanced scholars in such diverse fields as astronomy and physics, metallurgy, Chemistry, ^{life}sciences, medicine and just unbelievable disciplines - so we have made progress. Now this is part of the spin-off of what we can call the space effort. Now if

the space effort had no other side effect beyond what it has done for education, it would be worth the expenditure, but obviously education is just one of the fields that have benefited. There are many others. I mentioned, for example, the medical research, the biological sciences, the earth scientists, now I will tell you something else, we have learned from space. We have learned that you have to have multidisciplinary programs, inter-disciplinary programs. We have learned that you can't build little separate schools - these little separate departments, and all the mathematicians stay over here, and just have mathematics, and all the life sciences people over here, and the biologists out there and the chemists over there, and well, never shall the twain meet and never shall the Professors speak to one another. We have learned that is ridiculous. That is medieval. We are now learning that it is just as some people say that we must learn how to live together. We are making our disciplines work together. Resources devoted therefore to space efforts produce many benefits. Our space programs have demonstrated some practical benefits in the peaceful ways of life. Weather - President Johnson spoke two years ago, when I was the Chairman of this Space Council about the advantages of space and the economic effects

of space research and weather prediction - Why - the savings are unbelievable and the benefits are astronomical. We will save two and one-half billion dollars a year in agriculture alone, just because we have better knowledge about weather, due to space research. This may be the one working agricultural program. It is really doing some good. And I think you ought to get that over to the Secretary of Agriculture, because he has a lot of trouble. - 45 million in the lumber industry, it is estimated as savings. 100 million in surface transportation, 75 million in retail marketing. These are estimates made by your own Council of economic advisers. 3 billion dollars in water resources management, because we know more about weather, through space research, and after weather you come to communications.

Look at what we are doing in this field of communications. In fact, may I say, that space efforts that strengthen us militarily are the best safeguards we have for peace, because today we have means and ways through space science to learn a great deal about what other people are doing. It gives us the means to really gain information that is valuable, sometimes of the critical value to our security. We can today, more adequately and accurately monitor any arms

control agreement than ever before. And we have learned it has a by-product of our space effort. And then there is another great achievement and it came out so much in communications in the Satellite Corporation, for example, where our system of private capital and Government-sponsored research has helped to tie the world community closer together, through communication Satellites, and our space program has given an injection into this American economy, for economic and technological growth. It is the best thing that has happened to the American economy since the advent of the automobile. After all, every dime of space money is spent right here on earth. So far as I know, there are no sub-contractors on the moon. May I say if anybody gets there early, he will have a monopoly, so he might that may be an incentive. The space program has met profits. In the last 6 months of 1964, the Department of Defense spent alone 5 billion dollars on missiles and space systems in aircraft, and it spent in contract awards another 3 billion for experimental and developmental, and test and research work in missile space efforts. And the space program means jobs - we have over 300,000 men and women employed on the Appollo program alone, and if we are going to accomplish the goals that we have set out - and by the way, my good fellow Americans - don't go around telling people

your goals unless you are going to keep them. It is even hazardous for a politician to make a promise, if he isn't going to keep it, and a scientist that seeks the truth and says he believes in the truth should never make a commitment unless he is going to keep it. So we are going to have to be busy. Yes, our economy has had new life. It has founded new research - the space effort - and its developed hardware and constructed laboratories, and other useful facilities, and I want to underscore the undeniable fact of this infusion. The team work between privately financed and privately run companies on the one hand, and the Federal Government on the other and, is one of the great achievements of our time, and it is one of the major sources of strength of the whole national space program. In fact, it is basic to the strength of this great country. Your Government today is a partner, not an enemy. Your Government today is a co-worker in this effort, not just a policeman, and we have blended together in America at long last, the brains and the knowledge of our leaders in the universities. The competence and the management and the skill of our industry, the fabulous financial capacity of our great financial institutions, and the Government, and this is the only way that American can bring all of its power to bear upon any one objective. You can't

do it through the Government alone. Government alone in this country is but a small fragment, a small part of the total strength of this country. Private industry alone in this effort cannot do it because there are too many risks, to be undertaken by a profit system alone. The universities alone could not do it because it requires such massive infusions of manpower and capital, and so Government with its ability to produce the funding that is necessary, and the recruitment of scientists and universities with their great high standards of professional competence, and industry, and labor, and capital we have put together a team my fellow Americans, and one we ought to be proud of. We have learned from space, how to make Americans work together on this earth, for the good of the American people. Now I know that you have got a big program here, and I am not going to keep you much longer, but I just want to tell you just this -- the year 2000 is coming up on us fast. Gee, I remember when I used to mention that, I would think, oh, that it was so far away, but this is 1965. I intend to be around to see it, in case any of you are interested. And that year 2,000 is going to see a much different world, you are going to see a different United States, eith 90% of our people living in cities, and 40% of them right here on the Sea Coast, a much different world. And our economy is going to be different,

and above all this economy is going to have to grow, because we are going to double our population in the next 35 years. And so make room dear friends. And we are going to need this continued partnership that I talked to you about, that is why this experimentation between Government and the private sector is so important, just as it is important to experiment in sciences, to experiment in social institutions is also important, and as we learn in science we learn in social institutions. One thing we know is that this economy can't stand still, and another thing we know, is that we don't have to let it stand still. Depressions are no longer inevitable. We have learned a great deal about physical and monetary policy. We have learned a great deal about direction of an economy without having state planning, state control, and if this economy must grow rapidly our technology cannot pause or stop. You know we here about these underdeveloped Nations. We are one of them. We are still developing, what is it that gets over us to have people think that some how or other we have arrived? This is the youngest Nation on the face of the earth, in spirit, in dynamism, and we haven't developed, we are just barely getting moving and I want the world to know by the words and the actions of Americans, that we are not tired, we are not weary, we don't think we have made it. We are just

as lean and hungry as Cassius, and just as anxious all the time. Let me say that if I couldn't mention a dollar value out of this program, if there was any way we could justify it economically, I say you must continue, and we musn't tolerate any thought to the contrary, because this is man's history, as well as his destiny. We just know how terribly important it is. Now we have seen in our lifetime the world move in horse-power and in a liberal sense, to men being thrust into orbit about the earth, and I have talked longer now than it took John Glenn to go around this earth, several times. But who wishes to stop this progress of science. Surely not Americans, not its President, I don't think anybody in this room, and I want to tell you good friends something. By law, I am going to be Chairman of this Space Council for four years. Some of you maybe didn't know what you were getting. You know my father was a druggist and we used to have those sales - 2 for 1 - and when you went out and voted for President Johnson, you got me too, it just came with the package, and you are stuck with me, and I have had some experience, I have won and I have lost. I have heard people tell me how loosing develops character, but I want to tell you there is nothing about winning that hurts character either, and having tasted the bitter fruit

of defeat, and the delicious fruit of victory, I want you to know that I do not intend as Chairman of the Space Council to oversee the slowing down of our pace. I do not intend to witness, or be a part of the diminishing of our efforts, and if we were the only Nation engaged in a space program, if there wasn't anybody else involved at all, I still want to do better. It would still be in our self interest to increase our efforts. I am not one of these Americans who believes that the only reason we ought to be doing something is that if we don't the Communists will beat us. I would like to have our own standards for a change, just good old American standards of high performance that we are going to live by, just because we know it is the right thing to do, and we can do it. Why do we need to have the Red Devil come along and prod us all the time to get us busy. But you and I know that we are not the only Nation exploring outer space. In fact, we ought to get more Nations involved. This weeks news from the Soviet Union should emphasize what we have already known all too well. The Soviet's have placed great emphasis on space research. They have put priority upon it, they are not showing Westerns. Their children are reading science books. And they are investing great energy and fast resources and know-how

with great success in this space program. Now, we know that our military security rests on the same advanced research and technology as the space program itself, and we also know that outer space which we hope and pray will be a peaceful laboratory, that outer space could provide the arena for what Winston Churchill once called, the Wizard War, and if we are not strong enough in that so-called Wizard War we are doomed. And I think the first duty of a public official that takes an oath to uphold the constitution is for him to remember that in that constitution he is pledged to provide for the common defense, and the space effort vital to a better life, vital to a whole new world. He is also vital to the defense of the world that we have for free men -- and don't you forget it -- and that is why there should never be a contest, an argument, that can be unresolved between the peaceful efforts in space and the military requirements in space, they go hand in hand. So let me say, that wherever we stand, whatever may be our position in this competition in the world today, we cannot stand still. Each time that we pause, we have had shock from Soviet efforts in space, from Sputnik in 1958 to the man in the space suit of yesterday. We can, and as good people, people that admire performance, we can and we do salute these Russian

achievements. They are nothing short of sensational. We can and we do admire Soviet science and technology. We can and we do hope and pray for totally peaceful uses of our outer space. We can and do demonstrate our eagerness to cooperate with everyone in this great quest of science. But I repeat we would be foolish if we did not understand the military implications of Soviet space science as well as the military implication of our own. Again my friends, it is not either/or. We need both, military, and what we call the peaceful pursuit. Every Russian shock has produced some action here. But a mature Nation, I repeat, should not need shock treatment. Shock treatment is for the mentally, not for the healthy. We are a peaceful Nation, and we are a peace-loving people. And may it always be so, but we would ignore the real interests of the free world, and we are the leaders in the free world, and with leadership comes responsibility and sacrifice. We would ignore the interests of that free world if we diminished our military efforts in space. And this administration doesn't intend to let that happen. That is why even today four great companies in the United States are competing in the design for a man orbiting laboratory, amongst others. We are calling upon American industry to be better, more competitive. Well,

now I repeat again that in the time that I have been talking to you, John Glenn went a third of the way around the globe. I don't know where he is now, I think he is over Australia. But I don't intend to keep you Colonel in full orbit, now do I intend to keep the audience, I simply want all of you to know what kind of a Chairman you have, and I want you to know that I am determined to work on this space program, for its intrinsic value as an intellectual search, for its domestic value as an economic goal for growth, as a pervasive stimulus for excellence, and finally for its importance to our national security, and the survival of a free society. Two years ago I said in a speech, this is a wonderful time in which to live and that is what I said when I spoke to you first this evening, it challenges the best in us, it calls for doing the impossible, performing miracles, mediocracy must give way to excellence, timidity to daring, fear to courage. We dream of sending a man to the moon in this decade. We know that dream will be fulfilled only with sacrifice. Witha the commitment, a plan in a program, and I am delighted tonight to have made my maiden voyage into outer space speeches, among those of you who have indicated^{by}/your actions your willingness to do the

impossible your commitment to excellence, and I underscore the word, to excellence. Anybody can get by this day and age, we have got that fixed for practically anybody. The question is, are you really good excellence performance, and I do want to thank you for your commitment to excellence and to daring and to courage, and to a plan and a program, which will make America what we want it to be. The best, a great society in a good and explored and known universe. It is in your hands, or should I say it is in our hands, and I join hands with you in this worthy and common endeavor.

Thank you very much.



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