

FOR MONDAY PM'S RELEASE  
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THE VICE PRESIDENT G-241  
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EXCERPTS FROM REMARKS BY VICE PRESIDENT HUBERT HUMPHREY

"STEPPING STONES TO MARS" CONFERENCE  
DELIVERED BY EDWARD C. WELSH, EXECUTIVE SECRETARY  
BALTIMORE, MARYLAND - March 28, 1966  
NATIONAL AERONAUTICS AND SPACE COUNCIL

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I know that all of you join with me in joy and thankfulness that David Scott and Neil Armstrong made such a safe, happy -- and phenomenally accurate -- landing a few days ago.

We have gained a new appreciation through our space effort, of the vastness of the universe, but we have also come to realize, even more vividly the high achievements of which individual men -- tiny and insignificant as they may seem by comparison -- are capable.

I don't mean only the vision of our scientists and the ingenuity of our technologists, which have made it possible for us to set forth into space.

I also mean human skill, human courage, and human ability to cope calmly and effectively with grave emergencies -- such as the Gemini astronauts demonstrated to the highest degree.

Believe me, my heart was with them -- and the hearts of all Americans and of people throughout the world -- not least, I am sure, the Soviet astronauts, who share with them first-hand knowledge of the grandeurs and perils of space.

They showed courage and skill of the highest order in getting out of an extremely tight corner -- and believe me, we now know how tight a corner there can be, even in the vastness of space.

Their superb performance is a tribute to the excellence of their training. It is a tribute also to the worldwide ground support team, which converted an emergency into a routine landing.

These are Americans all of us can be profoundly proud of.

I think, however, too few people realize what these two brave and skillful men really accomplished before they ran into trouble.

When the history of man's adventure into space comes to be written -- a kind of 20th Century equivalent of Richard Hakluyt and his "Voyages and Discoveries of the English" -- I think we shall be more impressed by what went precisely according to plan on this flight than distressed by what went wrong.

The main purpose of the Gemini 8 flight was the physical joining -- the docking -- of two space craft in orbit, a maneuver of great delicacy. This was, in fact, accomplished.

What was left undone, in the way of space-walking and other maneuvers, was not fundamental to the objective of this flight.

Let me note one other point -- the prompt decision to cut short the mission rather than risk the safety of the astronauts. It is a heartening reminder that, even in this age of the computer, human life comes first and technology is the servant rather than the master of man.

This experience has been a stern warning of all of us that things can go wrong up there in space.

When I addressed the Goddard Space Dinner less than a fortnight ago, I stressed the vital importance of maintaining the most meticulous standards of forethought and performance at every level of our space effort.

I noted that, although this tremendous effort involves hundreds of thousands of people, each and every person involved in it must fully recognize and fulfill his own individual responsibility for its success.

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I am therefore pleased and impressed, in examining your agenda, to see that you will be dealing in detail with a very wide range of the complex problems involved in a voyage to Mars. Painstaking preparation like this has made the remarkable overall success of our space program possible.

As for myself, my confidence in our advancing science and technology is such that I believe that man can land on Mars -- although I do not venture to set any timetable for it.

Of course, I believe that we can and will achieve the original goal set by Presidents Kennedy and Johnson: a manned landing on the moon before 1970.

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Thus far, we have engaged in space cooperation with about 70 countries, advanced and developing nations alike. All cooperative projects are conducted openly, and the scientific and technological data resulting from them must be made freely available to the scientific community.

All such projects must be scientifically valid. There are no "token" programs or public relations gimmicks.

Ground-based cooperative projects are very appealing to less affluent nations because they permit some degree of participation in space programs without requiring costly space vehicles or hardware. While NASA's international program absorbs only about 180 million dollars, a small fraction of its total budget, a cooperative effort with another nation may represent that country's total space program.

The United States has arrangements with educational and professional centers in 34 countries around the globe providing for post-doctoral awards to senior scientists for participation in space research in this country, technical training at NASA centers in the U.S. in support of agreed cooperative

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projects, fellowships to graduate students on a shared-cost basis for training in space sciences at U.S. universities, and technical training at NASA installations abroad in connection with tracking-station agreements.

The United States has received about 13,000 visitors from more than 100 countries who came here to observe various aspects of the U.S. civilian space effort or to discuss opportunities for foreign participation in NASA programs.

A further instance of international cooperation in space is the fact that about 50 nations have already joined the international COMSAT consortium for the financing, ownership and operation of a system that is intended to extend its space satellite communications activities into a global network by the latter part of next year.

So far, the United States is the only country to devote a considerable portion of its energies and resources to space activities of immediate partical benefit to all the world by advancing science generally, and by giving other nations the opportunity to participate in this advance.

If imagination and enlightened self-interest continue to prevail in our space program, and I have every confidence that they will, we will press vigorously forward with ever wider international cooperation in this field -- thus supplementing our own resources in minds and money, furthering our shared adventure into space, and hopefully reducing, in some measure, political and econcmical tensions here on earth.

Coming back, in conclusion, to the theme of this gathering, it is indeed worth considering the possibility of having man's first voyage to Mars become a truly international undertaking. We in this country are eager to share the thrills and the benefits of space exploration with other nations.

This enterprise is of such tremendous, such breath-taking scope that there is ample opportunity for many nations to contribute to it, each in its own way. There are many imaginative and ingenious scientists and engineers in other countries, and we welcome their ideas on how Mars may best be reached and explored.

I know that the great dream of many of you is to make contact with life-- and hopefully with intelligent life--perhaps on Mars, perhaps elsewhere in the universe.

I think that this prospect should give us renewed determination to order our affairs better here on earth. I hope that we shall move with increased urgency and dedication from our present perilously obsolescent international system into a new world of freedom and justice under law.

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It is a privilege to live in a time such as this, when man is preparing, for the first time since life appeared on this planet, to voyage to other worlds.

It must have been rather like this in the Age of Discovery centuries ago, when our ancestors first ventured forth from Europe to discover a whole wide world they had never dreamt of.

And, incidentally, if you've looked into the tiny ships on which they made such long voyages, a spacecraft doesn't seem all that cramped and confining.

President Johnson said in his Inaugural Address that America is "the uncrossed desert and the unclimbed ridge." And then he brought us right up to the space age when he added that America is also "the star that is not reached."

I know that Mars isn't a star -- even though people once thought it was -- but it is a goal which stretches the human imagination to its utmost.

It is appropriate that you should meet in this historic and beautiful city of Baltimore -- which has vaulted right into the forefront of the space effort with its magnificent contribution to the Gemini program with its mighty and reliable Titan boosters.

I know that all of you join with me in joy and thankfulness that David Scott and Neil Armstrong made such a safe, happy -- and phenomenally accurate -- landing a few days ago.

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Of course, I believe that we can and will achieve the original goal set by Presidents Kennedy and Johnson: a manned landing on the moon before 1970.

I can foresee still other dramatic achievements -- although again I set no precise dates for them.

1. The exploration of the lunar surface, and possibly the establishment of one or more permanent bases there.
2. The development of a whole family of earth-orbiting stations, manned and supplied by regular ferry services.
3. The building of spaceports in a number of places in this country for the departure and arrival of spacecraft.

4. The development of recoverable and re-usable launching vehicles, and maneuverable space vehicles, with a consequent drastic reduction in the cost of space travel.
5. The improvement of propulsion methods, with the use of nuclear as well as chemical energy, so that faster and more powerful rockets can make planetary trips in a week or less which today would require many months.
6. The launching of unmanned probes to every part of the solar system -- and perhaps manned planetary expeditions as well.

Prospects like these are thrilling and enthralling. But we must not, however, let them tempt us to neglect the application of space technology to achieving a better life -- a Great Society, if you will -- right here on this planet earth.

Technological advancements -- some of them real breakthroughs -- are occurring with ever-increasing speed. We must see to it that they are disseminated and applied as widely as possible at something like a comparable rate.

Already, we are beginning to achieve substantial terrestrial benefits from our space effort.

In the field of medicine, we are fast approaching the day when it will be possible to monitor continuously and in detail the condition of hundreds of patients from a single central location. Already, the use of our communications

satellite system has enabled a doctor on one continent to diagnose a patient with a heart affliction on another.

We are rapidly improving our ability, through the use of meteorological satellites, to predict with accuracy the weather everywhere on earth. Ultimately, we may be able to control, and bring life-giving rain to hitherto arid parts of the earth.

Through satellites and sensors, we will improve our techniques for detecting forest fires and surveying natural resources.

We will increase the accuracy of air and sea navigation under all weather conditions and in every part of the globe.

I could also mention, as dividends already from our realized space effort, such things as new alloys, ceramics, and plastics; new industrial processes; and more efficient, reliable and compact electronic equipment.

Already our space program has contributed materially to our national security -- communications, weather, and navigation satellites are backing up our effort in Vietnam.

I should like now to turn to a matter of special interest to me -- space in international relations.

Astronauts Schirra and Borman have just returned from a trip to six free Asian capitals and to Australia and New Zealand. And it was a most successful trip.

Everywhere they found scientists, students, and even the general public keenly interested in space and surprisingly well-informed about it. Everywhere, they found deep appreciation of the open way in which much of our program has been conducted -- a practical and convincing demonstration of the meaning of an open society.

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