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SPACE FLIGHT PROJECTS - TODAY AND TOMORROW

NASA Symposium on Scientific and Technical Information.

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by

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Ladies and Gentlemen:

Travelling to Atlanta is always something pleasant for us Huntsvilleans. We do not cross the Mason-Dixon line, but we stay right in the beautiful South which more and more becomes a symbolum for the happy merging of two of the most remarkable forces in our times: a clinging to the charming, graceful, serene way of life, and a powerful move to utilize modern technology and science for a goal that will become the brilliant trademark of our century - human flight to the Moon, and to the planets. This very fortunate mixture of pleasant stability with energetic dynamism in the South is more than only a way of doing things. In fact, when northerners or westerners ask me to explain the South to them, I simply say: the South is a state of mind!

Another reason why we from the Marshall Center in Huntsville are fond of Atlanta is because many of our colleagues received their education at the Georgia Institute of Technology. When a young applicant visits our employment office and says "I am from Georgia Tech," he can be sure of our

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greatest interest in his professional future. If he decides to accept a job offer and to join the big team at the Marshall Center, he will soon find out that he has become a member of a most active and also quite successful family, and that his work day encompasses hard work, a fast pace, and an intriguing spirit of adventure.

Huntsville in Alabama, my present home town, harbors the NASA-George C. Marshall Space Flight Center. With almost 8,000 civil service employees, and with many thousand men and women in industry, at universities, and in other government organizations who work in very close contact with the group in Huntsville, this Center represents the largest single group in the country that works solely on the development of space flight. We are a part of the National Aeronautics and Space Administration which has its Headquarters in Washington, and its Field Centers at eight different places in the country. Our major development project at the Marshall Center in Huntsville is the Saturn Project. It consists presently of three family members: the Saturn I, the Saturn IB, and the Saturn V. The first two will serve to make test flights into Earth orbits, with Gemini and Apollo capsules, and also to launch unmanned space probes to the Moon and to the planets. The Gemini and Apollo manned capsules are under development at the Manned Spacecraft Center at Houston, Texas. The Saturn V will launch the Apollo capsule with its human crew of three on flights to the Moon, hopefully before the end of this decade.

Before talking in detail about the Saturn project, I wish to say that the subject of your present symposium, Scientific and Technical Information, is very close to our minds and to our hearts on every day. Information is continuously developed by scientists, engineers, and administrators; it is also continuously developed on the test stands, on flying rockets, on satellites, and on space probes. Some of this information is transmitted verbally between those who are directly involved in research, development,

testing, and launching. Most of it, however, finds its way into technical and scientific reports. To give you an impression of the number of reports with which a modern scientist or engineer is confronted, I want to show on the first slide the number of yearly scientific papers during the past 200 years. This number follows an e-function. In another 37 years, we will have one million scientific papers per year. This horrendous growth indicates that we can survive, scientifically speaking, only if we increase our effort in at least two directions: first, by increasing specialization; and second, by developing methods for an efficient condensing of the material for those who hold supervisory positions. These large numbers of scientific and technical papers imply also another fact, namely the tremendous wealth of knowledge developed continuously by scientists and engineers. We from NASA are convinced that we must provide a feedback from our space projects into our lives right down here on Earth, and that everybody, regardless of how remote from space he may be, should and will benefit from space work. The NASA is engaged in a large and very successful program to make space technologies available for Earth uses. The subject of your symposium today and tomorrow deals with this program.

There are, of course, still more problems which face us in our space flight development programs. However, solutions are always found in one way or another, and some fine successes have already set milestones for our voyage into space. On slide two, we see the first member of the Saturn family, Saturn I, shortly after take-off. Only the first stage is live in this launching; the upper stages are dummies. Four Saturn I launchings of this kind have been made to date, all of them successful.

Slides 3-40:                   Saturns I, IB, V.  
                                  Lunar Project  
                                  Orbital Maneuvers  
                                  Landing on Moon

Lunar Surface  
Meteoroid Satellite  
Return to Earth  
Nuclear rockets  
Electric Space Vehicles

Mr. Webb, the Administrator of NASA, expressed the reasons why we must undertake space exploration in the following way:

First, he said, the exploration of space by us and by others is now definitely underway. Knowing this, we cannot settle for anything less than a place in the front row.

Second, we simply cannot retain leadership of the free world - in fact, there may be no free world to lead - if we forfeit to any other nation the opportunity for pre-eminence.

Third, our national defense, perhaps our survival, demand that we act to insure that no hostile force will be permitted to use space as an unchallenged staging area for aggression against us.

Fourth, the most important reason, because it promises greatest rewards for mankind, is the certainty that scientific knowledge and applications that derive from space work will offer vast returns on our space investments right here on our Earth.

These four points indeed represent very strong motivations for the many Offices and Centers within NASA, and for their innumerable contractors all over the country. In fact, working for our national space program is more than simply holding a job somewhere in the country; it is truly a state of mind. This is why we at NASA believe that our national space program, in due time, will meet with brilliant success.