

ADDRESS

October 4, 1966

James E. Webb
Administrator, NASA

First of all, let me say I am very happy to be here and to have you here; and to say second, that you will have to discount a little bit of what Dr. Silverstein has said about anybody leading NASA - we have all worked together. We have 17 laboratories, of which this is one and one of the largest. It is, I think, an outstanding example of what we call a research laboratory, although there are many development projects here also. The large development laboratories like the Marshall Space Flight Center, Huntsville, and the Manned Spacecraft Center, Houston, are intended to bring into use large operating systems. This laboratory is intended to provide leadership and cooperative working relations with universities and industry in the field of propulsion. It also does a great deal of work in the field of materials and space power generation, and I think you will see that here, today.

My first introduction to the National Advisory Committee for Aeronautics was at a group like this back in 1933. I was working for a committee of Congress and was invited to go down to see what was going on at NACA at Langley Field, the only laboratory at that time. And since NACA wanted to "do it up brown" and I was a Marine Corp Reserve Aviator, they took me down on a destroyer from Washington to Langley. After the laboratory inspection, they took us out on two carriers, the "Lexington" and the "Saratoga," to show us a demonstration of naval aviation. We have come a long, long way since that time.

In a period of rapid expansion, NASA did not continue the kind of demonstration that you are having here today. But now we have reestablished them, and, in addition, have established sessions for groups of specialists. The last time I was at Lewis, 200 research men from the petroleum industry were here for 2 days to become acquainted with some of the technology that underlies the space effort that may be applicable to their field. I say this simply to indicate that our most important responsibilities include not only working

closely with those of you in universities and in industry, but also include maintaining Government civil service people who are able and knowledgeable enough to carry forward the important work that has to be done and to share that information as widely as possible.

In all of NASA, 95 cents of each dollar goes outside the agency. A great deal of procurement is done here. There are contracts with 3000 or more industrial companies; research contracts and grants with over 50 universities; and by and large, a mixture of awe-inspiring work in the fields of propulsion and particularly in the application of new knowledge in the field of materials. Once we have done this work, have solved the problems of applying the knowledge in airplane engines and in rockets, we do not stop. There is going on at this laboratory and at every NASA laboratory a continuing effort to examine the work to determine how nonspace industry can benefit from it.

In eight regional dissemination centers run by universities (and subsidized by NASA) the knowledge coming from our work is stored and used by nonspace industry. In addition, publications are available through the Department of Commerce.

I brought to Dr. Silverstein today the 1000th technical brief that has come out of the work in this program during the last several years. A total of 82 of these have originated in this Center. This Tech Brief, which I hope he will keep framed and on display, describes bearing alloys with hexagonal crystal structures that provide improved friction and wear characteristics, thoroughly explains the basic requirements for the necessary work, and ends by saying that this invention is owned by NASA and a patent application has been filed. And then it adds, royalty-free, nonexclusive licenses for its commercial use will be granted by NASA. All you have to do is ask for it. The license is granted as much as to make sure that the status of its use in industry is understood and is on a clear legal basis, as it is to get a report as to what is happening. Each licensee is required to report once a year what he is doing with this material in commercial applications. Thus, we are steadily building up a record of how a country like the United States can use public funds to advance in areas of energy, electronics, and use of new materials and to incorporate this information into improved engineering systems. This record also helps NASA do the management job that permits it

to use 20,000 contractors, that is, prime, first, and second tier subcontractors, to spend 95 cents of each dollar outside its own laboratories and not lose control, and to make sure that the forward thrusting requirements in aerospace are met. The policy is very simple: We will maintain enough in-house competence to know what we are doing; we will not become tied to systems that are not the best; we will use industry to build the equipment and to do as much of the research and development as they are capable of doing and use the universities for the forward-thrusting effort in science. There are now on the campuses of 200 universities, 10,000 scientists, graduate students, technical people, and engineers doing research work of a university character; this also feeds into places like Lewis. You are seeing now, I think, the results of very major efforts by this country to try to find a new way to increase our total national competence.