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ARMY BALLISTIC MISSILE AGENCY
U. S. ARMY ORDNANCE MISSILE COMMAND
REDSTONE ARSENAL, ALABAMA

IN REPLY
REFER TO ORDAB-DV

15 Jan 60

Dr. Keith T. Glennan
Administrator
National Aeronautics & Space Administration
1520 H. Street, N.W.
Washington, D. C.

Dear Dr. Glennan:

During a recent visit by Mr. Al Siepert to the Huntsville Center, the question of funding the anticipated supporting research effort of this Center was discussed at length between Mr. Siepert, Mr. E. Rees and myself. Subsequent shorter discussions which included Dr. von Braun, Mr. A. Hyatt and Mr. R. Horner confirmed in essence the results of the discussion with Mr. Siepert.

Mr. Siepert recommended very strongly that a meeting be held between you, Dr. von Braun, Mr. Horner, and myself, and that the more problematic points of the supporting research situation be brought to your attention in that meeting. - In the meantime, your office fixed the date of the meeting as January 29, 1330 hrs.

Mr. Siepert recommended further that a very short and concise resume of the result of our past meeting, presented in the form of a request, be submitted to you as early as possible, in case you may wish to use some of the material in the forthcoming Congressional hearings.

In compliance with Mr. Siepert's request, the resume, in the recommended form, is attached. Hoping that it will meet with your approval, I remain

Respectfully yours,

Ernst Stuhlinger

1 Incl
Resume

ERNST STUHLINGER
Director
Research Projects Laboratory

Concur:
Wernher von Braun

Request for the Establishment of A Supporting Research Fund for the Huntsville Center.

15 January 1960

The Development Operations Division, while executing missile and space vehicle development projects, has been confronted during past years with the need for two different kinds of research activities:

(1) Research work in support of existing vehicle development projects.

Example: Research on ablation materials necessary for the Jupiter re-entry nose cone.

(2) Research work not immediately related to an existing development project, but aimed at the advancement of the art of guided missiles and space projects in general and based on the specific capabilities, competence, and experience of the Huntsville team. The results from this type of research are expected to provide the basis for future project developments, just as the advanced research of several years ago is being incorporated into today's projects.

Example: Research work to extend the capabilities of present inertial guidance systems towards long-time operation. - This modification of existing systems will be required for refueling maneuvers in orbits, parking orbit techniques, high-precision injection into 24-hour orbits, precise lunar trajectories and other missions in space.

It is anticipated that a very similar need for research activities will continue to exist in the future.

In both categories, part of the research effort will be done inhouse by members of the Huntsville Center, but the greater part will consist of research work contracted to suitable companies, utilizing to maximum advantage the technical supervision of specialists in the team.

The inhouse research work, to be carried out by members of the team within the offices and laboratories at the Huntsville Center, appears to meet with no particular organizational or funding problems under the Organization Plan as discussed recently between representatives of the NASA Headquarters and the Huntsville Center.

However, a line item to provide funding for the out-of-house research effort of the Huntsville Center is not shown on the present budget plan. In view of the very urgent need for this type of supporting research, and with reference to the "Transfer Plan" transmitted by the President to Congress on January 14, 1960, Section I, which reads in part "Those functions....relating to the development of space vehicle systems....and research connected therewith.....are transferred to the NASA.", it is requested that consideration be given to the establishment and the funding of a permanent assignment to the Huntsville Center to execute research through out-of-house contracts, (a) to support existing vehicle development projects, and (b) to advance the art of guided missiles and space vehicles in general. The

responsibility for the selection of proper research projects should be vested in the Director of the Huntsville Center, Dr. W. von Braun.

Based on long experience with missile development projects, it is believed that the out-of-house supporting research effort of a development team like the Huntsville Center should comprise about ten percent of its total monetary volume of work. Estimating the latter conservatively at about $200 million per year, the yearly out-of-house research effort should amount to about $20 million. This amount should be divided approximately evenly between research work that supports existing vehicle development projects, and research aimed at the advancement of the art in general.

An average number of 8 to 10 contractor persons working on a research contract can be efficiently supervised by one person of the contracting development team. Under this assumption, and assuming further that one research engineer or scientist is the equivalent of $25,000.00 per year*, the $20 million yearly supporting research budget would represent a total force of 800 men. Out of these, about 700 men would be contractor personnel working at different companies under contract, while the equivalent of 80 to 100 men would be represented by all those members of the Huntsville Center, who will devote part of their time to the supervision and direction of the contracted research projects. The cost of the 80 to 100 men belonging to the Huntsville

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* This figure includes normal laboratory equipment, but does not include major capital equipment and unusually high material cost.

Center should be considered as included in the normal operating funds of the Center. The remaining cost of the anticipated research program, about $18 million, is not provided as of now in the 1961 budget plan of the National Aeronautics and Space Administration.

In view of the foregoing, it is requested that a supporting research fund of this magnitude be established for the Huntsville Center, and that it be included in the NASA budget at the earliest possible time.