

Mr. Lehan then founded his own company, Space-Electronics Corporation, and served as its Executive Vice President from 1958-61. In 1961 he and his partner sold the company to Aerojet-General, and it became known as Space General Corporation. He served as Executive Vice President of Space General in 1961 and 1962, and as its President from 1962-66. Since leaving Space General, Mr. Lehan has been a consultant on a variety of scientific and engineering projects, including serving as a panel member of the President's Science Advisory Committee.

Mr. Lehan is a Fellow of the Institute of Electrical and Electronic Engineers, a member of the American Institute of Aeronautics and Astronautics, and the American Association for the Advancement of Science. He is an Associate of the California Institute of Technology.

Mr. Lehan is married and has one daughter. He resides with his family in Washington, D.C.

STATEMENT OF FRANK W. LEHAN, ASSISTANT SECRETARY FOR RESEARCH AND TECHNOLOGY, DEPARTMENT OF TRANSPORTATION

Mr. LEHAN. Let me make a very rapid summary and we can go back over the material.

First, I appreciate the opportunity to appear here before you because the particular question that your subcommittee is investigating is one that I consider most important in the field of research and development in the country, and one which I am personally very much interested in.

Mr. ROUSH. Is this partly because you must depend on other laboratories?

Mr. LEHAN. It is partly because I must depend on other laboratories. It is also because I feel that the future of research and development in the country depends upon the degree to which we are able to satisfactorily utilize the technology complex we have built.

As you know I have had only a short time in Government service. Hence I must draw on past experience, in large part, for my opinions.

I spent 10 years at the Jet Propulsion Laboratory under Dr. Pickering, who testified earlier, in electronic research and the direction of moderate-sized research and development programs.

Subsequently, I was involved in the early and middle development phase of the ICBM and IRBM programs as Associate Director of the guidance and control programs.

I regard both of these opportunities to have been valuable. They gave me some exposure of the kind of problems that you run into in the technical management of programs.

One observation, drawn from my past history and my short experience at DOT is that there is rather significant contrast in the technical vigor with which defense and space programs are pursued, as compared with the technical resources that are brought to bear in transportation-related programs. I consider one of my tasks is to try to modify that situation. In this task Government laboratories are an important ingredient.

Another general observation is that, in my opinion, the key to a successful development program is in what has been called the systems engineering and technical direction area. This activity is an art, not a science. Let me mention three ingredients of this art.

First, thorough planning and documentation at the start of a program.