

Dr. HIBBARD. Yes.

Senator ANDERSON. Is all the basic research being done by the Federal Government?

Dr. HIBBARD. It is largely being done by the Federal Government.

Senator ANDERSON. Then you contract out certain portions of the project, that is mainly equipment, then you get your bids and make awards; is that right?

Dr. HIBBARD. Yes, sir.

Senator ANDERSON. But all the research is being done by the Federal Government?

Dr. HIBBARD. Yes, sir.

Senator ANDERSON. Why should industry not be more involved in this? This was the question, I understand, that was raised in connection with the turndown by the Senate Appropriations Committee. While we are on it, I think it would be useful just to have that.

Dr. HIBBARD. First of all, I think it is important to know, equipment manufacturers are not the kind of people to undertake research necessary to produce the kind of advancement we are talking about here. In other words, in my chart there are three curves. I think the kind of evolutionary development occurring if the Government undertakes no additional research is shown by the green line. This is the kind of development that has been going on, the kind of development which has been satisfying industry, so to speak. Now, the substantial part of this \$20 million we foresee being spent in the next 15 years will, in fact, be spent by public agencies, people who will need tunnels or subways. For example, for building highways, for transporting water. Therefore, the major benefits of this advanced technology, tunneling technology, will be a decrease in costs to the taxpayer.

Senator ANDERSON. Yes. But how about the fellow who is manufacturing this equipment. He is not going to starve.

Dr. HIBBARD. No.

Senator ANDERSON. I mean the benefits flow ultimately like any improvement in science and technology to the people as a rule, but it seems to me industry, and I refer to it in the plural, the industry has a tremendous opportunity. If they are looking for growth, if you are looking ahead and take a careful look at the requirements during the period you outlined there, if we find this approach happens to be feasible, I would think the equipment industry would move into this area and say to their board of directors, "This is a neglected area and I think we ought to get on the stick and get with it." Is that not what business is looking for?

Senator MOSS. Is this not the key to the SST development? They decided industry would not do it, so the Federal Government moved in.

Dr. HIBBARD. It is going to be extremely expensive. Something industry is not going to do alone. Today they can sell everything they can make because the mining industry is booming. To be perfectly honest, if I were—I am speaking for myself now—a chief executive or officer in one of these corporations I am not sure I would do research because the cost would squeeze my market from \$20 million to \$12 million.

Senator ANDERSON. Except that you open up new markets. This is the key point, Doctor, that is being missed. You know, years ago Ford