before the scientific community can achieve as much as they want by way of scientific information. Mainly, the scientists are concerned with the cost of transportation; they'd rather put more emphasis on missions and operations. However, the report agrees that it is necessary to have the workshop capability in order to learn to operate the space vehicles required for those missions.

Mr. DORRENBACHER. I think their hesitancy is almost entirely based upon this problem of transportation cost. If the scientists can't look at the workshop as a place where they can conduct their own experiments, eventually they will be inclined to prefer to take the less precise but more immediate information that they can get from less expensive, unmanned orbiters and probes. They think of the information that they get back from astronauts, or even from astronaut/scientists, as essentially remote reporting. That is why they are just as willing to accept information from sensors in unmanned vehicles.

Mr. GURNEY. In your references to scientists, who do you mean, specifically, people like astronomers?

Mr. DORRENBACHER. Astronomers are good examples. But basically, I am referring to any scientist who feels that his discipine has applications in space. I believe that these people will contribute immensely to our national well-being and scientific advancement. We know that the science of astronomy will improve by an order of magnitude when we can get the astronomer and his telescope to work in space. Surveillance of our natural resources can hardly be accomplished in any other way. Even now we are paying far too much for weather survey stations and probes scattered about on the surface of the Earth.

Mr. GURNEY. How is industry communicating with scientists in projecting the importance of their role in space?

Mr. DORRENBACHER. Initially, that communication was poor. However, it has been greatly improved. The efforts of our NASA program have begun to produce results during the past year. Four years ago, few scientists knew what they would be able to do in space. Consequently many of them were apathetic to the scientific aspects of the space program. Today, they are quite enthusiastic. When we can tell them that we can transport them in a 2 g. vehicle, and that they will have the tools they need in a space station, and that they can operate their own equipment and conduct their own experiments, we will have their complete cooperation. Even now, with the astronauts operating the equipment that the scientists would rather operate themselves, they are still quite pleased with the information that they are getting.

Mr. TEAGUE. We have some scientists with astronaut training now.

Mr. FREITAG. We have five. These people are scientists who were recruited as astronauts. Five more are regular pilot-astronauts who have scientific training through the doctorate degree. That gives us 10 people, already in the program, who have professional academic training through a doctorate degree and who have had professional experience in their major fields.

Mr. DORRENBACHER. Certainly that is a step in the right direction. The scientific community has confidence in those people. But, in general, in spite of their education, those astronauts are not thought as of practicing scientists in the purest sense.