The objective is to acquire information of a purely scientific nature.

The third objective relates to in-orbit research and development support of Department of Defense programs—for example, trying out operational techniques and possible hardware equipment.

The fourth major objective identified is to explore what our capability is for economical space flight. This relates back very heavily to the initial objective I discussed on the preceding slide. And as you will see in a few moments, our current investigations lean heavily toward the consideration of reuse of hardware from previous flight; whether we leave it in space and go back and reuse it, or whether we bring it home from space and then launch it again. We'll touch on some of the results of our work there later.

In terms of long-duration objectives, as Mr. Myers pointed out earlier, we have much to learn about men in space. Men have been there 14 days, but we have yet to know the full extent of extended-duration zero-G exposure. Here I am referring to time spans out to the order of 600 to 900 days, the types of duration that would be involved with manned planetary flights.

The fifth objective, and incidentally these are not in any order of priority, the fifth category listed relates to lunar exploration. This involves getting a better understanding of the lunar surface and what is beneath the lunar surface, and trying to better understand, from our lunar explorations, the total solar system and how it evolved. And perhaps most important is to establish the role of the moon in future space operations—for example, as an astronomical observatory.

Some of the primary parameters that govern the program within which we operate are based upon the common use of modules (slide 50). By this, we mean that the steps that we presently consider taking evolve from or revolve about the consideration of hardware that would be used, for example, in early earth orbital space station operations, being potentially useful in subsequent space activities, even leading to planetary activities. With this approach, we can make use of every step along the way. The use of the long-range planetary "goal" is intended simply to set some of the standards for the earlier near-earth type of operations. The use of that "goal" does not require an early decision for the long-term commitment to place a man on or near the planets in the 1980 period or later. But, in fact, each step of the program, as it is currently defined and as we are pursuing it with NASA, is a complete step by itself, and is one that is of major national significance.

Mr. PETTIS. Mr. Chairman, may I ask a question? You aren't going on to this, so I'd like to go back to a previous slide. You don't have to go back to it, just the question. Relating this to manned flight on this earth, or airplanes, let's say, the chain is no stronger than its weakest link. Now, something in this space capsule is weaker than the craft itself. Is there research and development going on toward the development of a way to maintain these weak links in the spacecraft?

Take, for example, the radio, I don't know how advanced the art is in this particular field, but ultimately some parts of this are going to go before the total hardware has gone; and in servicing this, is there thought for taking care of it so that you don't have to throw the whole thing away because some part of it wore out before the rest of it?