Mr. ROBACK. Am I right on that? Somebody has a quizzical expression in the audience. Are the 60-foot terminals the ones that have been operating from the old Syncom days?

Dr. TUCKER. Yes, that is correct.

Mr. ROBACK. I didn't want to be in error there. You have a development program for the 40- and 18-foot, and your statement is that in the 18-foot terminals—at this stage of the game—it is hard to tell anything about their reliability or lifetime.

Dr. TUCKER. Yes. I think that the operational experience has not yet been sufficient to be able to make reliable projections. There have certainly been a number of initial problems with them which lend themselves to straightforward correction. When those corrections are made then we will be in the realistic position to assess what the long-term reliability is for these terminals.

RELATIVE COSTS OF SPACE AND GROUND SEGMENTS

Mr. ROBACK. Are the costs roughly equal for the ground and the space systems?

Dr. TUCKER. Mr. Benington, can you answer?

Mr. BENINGTON. The space system is much more expensive than one terminal. A terminal would be 1 or 2 percent of the space system so there is a question of balance as we indicated last year. In order to get an effective system from a cost point of view you have to add enough terminals so you can amortize your costs over enough terminals.

Mr. ROBACK. Once you have the space system operating, the efficacy of the system depends on the number of terminals and kind of terminals.

Mr. BENINGTON. Yes. What happens is if you have very few terminals and you are too low in your terminal population, your effective costs are very high because you are spreading these high space costs over a few terminals. As you increase the number of terminals, you reach a point where you reach the minimum cost per terminal. Then as you add more terminals, and this may make sense, you are adding them so you can have more accesses to the system. Those terminals won't necessarily operate all the time. You make the maximum use of their capability. They will give the user access to the system he wouldn't have otherwise.

We believe the minimal terminal population we have programed gives us this minimum cost point per terminal.

Now we want to see how the requirement for additional access matches off against the cost of the additional terminals.

Now the cost of the terminals is becoming a dominant part of the calculation.

Mr. ROBACK. The cost effectiveness of the terminal population is one consideration.

Another is that if you have budget constraints, you may have less terminals than might be cost effective. Is that right, Mr. Benington?

Mr. BENINGTON. Well——

Mr. ROBACK. That is to say, you might devise an optimum terminal population but if there were budget constraints generally, you might say, "we will defer some of the terminals because we don't have the money this year."