

Mr. ROBACK. There has been some slippage in the development program?

Mr. SHELOR. There have been a few unexpected problems, but a small amount of slippage compared to the complexity of the satellite, we believe.

Mr. ROBACK. Are the problems in the public domain?

Mr. SHELOR. No. One—I wouldn't want to discuss them in an open hearing.

STEERABLE NARROW-BEAM ANTENNA

Mr. ROBACK. In view of the pending procurement of the phase 2 satellite, you said you didn't want to discuss the details, but can you discuss here the technical state of the art in the steerable narrow-beam antenna?

You said evidence of workability was in hand last summer. Where did the evidence come from?

Mr. BENINGTON. From a number of programs, Mr. Roback. Many of them have not been associated with communication satellites; some of them being classified. I think one very important development was a way of stabilizing the platform without spinning it, so we could have the portion which generates and handles the radio frequency stabilized and not spinning around.

This sort of stabilization technique is being developed in the tactical satellite program. So that is one important source of competence. In addition, there have been numerous engineering studies on the part of the Department and on the part of manufacturers as to what sort of risks are involved as we get an accumulation of technologies from many sources.

And these studies convinced us and some of the more knowledgeable manufacturers who support us, NASA and the Intelsat program, that this technology is coming about. As a matter of fact, this narrow-beam technology is not unique to the Government, but the Intelsat 4 satellite is considering using this same form of technology.

Mr. ROBACK. Why would a commercial communications entity be interested in that? Is that for dedicated or specialized service?

Mr. BENINGTON. For example, in going between the United States and Europe. By proper selection of the beam to cover Europe where you tend to have a lot more traffic within highly populated areas, both within the European area and coming back to the United States, and this could turn out to be an attractive feature.

Mr. ROBACK. The concentrated energy would be in the high-density traffic areas. That is the rationale.

Mr. BENINGTON. Exactly, yes.

Dr. TUCKER. And by using two steerable beams, one directed to one population center and another to another population center, you could establish links between them with very high volume.

Mr. ROBACK. Some of this technology was developed in relation to the Comsat program, you say?

Mr. BENINGTON. Or manufacturers anticipating what Comsat would be looking for, yes.

Mr. ROBACK. So you benefited from the general work that has been done for Comsat in this area.