

STATEMENT OF DR. GARDINER L. TUCKER, DEPUTY DIRECTOR, DEFENSE RESEARCH AND ENGINEERING (ELECTRONICS AND INFORMATION SYSTEMS), DEPARTMENT OF DEFENSE; ACCOMPANIED BY LT. GEN. RICHARD P. KLOCKO, U.S. AIR FORCE, DIRECTOR, DEFENSE COMMUNICATIONS AGENCY; E. GROGAN SHELOR, ASSISTANT DIRECTOR (COMMUNICATIONS AND ELECTRONICS); HERBERT BENINGTON, ASSISTANT DIRECTOR, COMMAND AND CONTROL, OFFICE OF THE DIRECTOR OF DEFENSE (RESEARCH AND ENGINEERING); WALTER H. MORSE, COUNSEL; JAY J. COHEN, TECHNICAL ADVISER (SATELLITE COMMUNICATIONS); AND LT. COL. WALTER A. HOGGE, JR., U.S. AIR FORCE, CHIEF, COMMERCIAL POLICY DIVISION, DEFENSE COMMUNICATIONS AGENCY

Dr. TUCKER. Thank you, Mr. Chairman.

I am Gardiner L. Tucker, Deputy Director of Defense, Research and Engineering for Electronics and Information Systems in the Office of the Secretary of Defense. It is a pleasure to appear again before this committee to discuss the achievements and plans of the Department of Defense in satellite communications. I am accompanied this morning by Lt. Gen. R. P. Klocko, Director of the Defense Communications Agency, by Mr. E. Grogan Shelor, Assistant Director for Communications and Electronics in D.D.R. & E., and by Mr. Herbert Benington, Assistant Director for Command and Control in D.D.R. & E. Mr. Shelor has cognizance in D.D.R. & E. over the tactical satellite communications R. & D. program. Mr. Benington has cognizance over the Defense Satellite Communications System.

In my statement, I would like to cover four areas: The status of the Initial Defense Communications Satellite Program; our plans for the next phase of the Defense Satellite Communications System; the status and plans of our R. & D. program in tactical applications of satellite communications; future planning to be done.

Last year I reported that we had 17 IDCSP satellites operating in near-synchronous equatorial orbits. All 17 of these satellites are still operational. Last week, on June 13, a successful launch from Cape Kennedy placed eight additional satellites into orbit and they are all operational. Thus, today we have 25.

The on-orbit life of these satellites has far exceeded our original expectations. The original specification called for an average life of 1½ years and we hoped for three. We have experienced some component failures in orbit and some of the satellites have switched from the primary transmitter tube to the alternate backup tube. The redundancy designed into these satellites has, however, allowed them to continue to perform within specifications. A statistical analysis of experience to date leads to the prediction of a mean-time-to-failure for the satellites of well over 10 years. However, each satellite contains a switch designed to turn the satellite off after 6 years in orbit. Therefore, even with no further failures, we will begin to lose satellites in 1972, 6 years after the initial launch of seven satellites in June of 1966. We can expect to maintain at least 20 operational satellites in orbit until the end of 1971.

Mr. HOLIFIELD. Could I ask you a question?