

Without a specific history of failures, it is difficult to predict how long the satellites will continue to operate. Our best guess is that, based on the successful launch of last week, we should maintain a usable system of at least 15 satellites until some time in 1971. You will note, however, that with a system of this type with 15 satellites the length of outages on long East-West links such as across the Pacific may become excessive. You should also note that each of these satellites contains a switch which will automatically turn it off after 6 years. We will therefore begin to lose satellites in 1972 even if all other portions of the satellite continue to operate. Also, by early 1973 we will lose at least 15 of the 25 satellites now in orbit. All of this contributes to our planning for the follow-on system.

However, before I proceed to that phase of our effort, let me review the status of the ground system. I am certain that you recall that we have four types of terminals in the program: large fixed terminals with 60-foot antennas (AN/FSC-9); medium transportable, 40-foot terminals (AN/MS-46); small transportable, 18-foot terminals (AN/TSG-54); and shipboard 6-foot terminals (AN/SSC-3). Last year we reported that nine terminals, including the CONUS AN/FSC-9's were deployed for use. At the present time, or as of May 15, we have 17 terminals in operational status. These include the AN/FSC-9 in California and New Jersey, AN/MS-46's in South Vietnam (2), Ethiopia, Germany (2), Hawaii (2), Okinawa, the Philippines, Guam and in CONUS at Brandywine, Md.; and AN/TSG-54 at Guam, Australia, Korea and Thailand. Additionally AN/TSG-54's will soon become operational in Alaska, Colorado, Guam, Hawaii, and Maryland. The Navy's shipboard terminals are currently undergoing extensive design and modification study prior to final deployment for operational utilization.

The performance and reliability modifications to the AN/MS-46 terminals have been almost completed. The major outstanding item is the 12-channel multiplex equipment for four of the terminals. This equipment is expected this fall with the firm delivery depending on competing priorities and a strike at the manufacturers plant. [Deleted.] Performance and reliability of the terminals have improved greatly during the past year. We can now rely on better than 90 percent availability of the terminals on most of the links. The failures that have been experienced are being studied, and all future failures will be watched to determine what, if any, additional modifications will be required. The performance and reliability record of the AN/TSG-54 terminals are also being carefully watched for any patterns of failures which may justify equipment modifications. We have not obtained sufficient performance data on this terminal to come to a conclusion at this time.

The majority of our operational use of the satellite system is common-user voice service. There are, however, several 16-channel tele-typewriter tone packages used on some of the circuits, particularly the Hawaii-Vietnam, Hawaii-Brandywine, and Ethiopia-Germany portion of the system.

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Mr. HOLIFIELD. Does Comsat transmit pictures as well as—  
General KLOCKO. Yes, sir, TV.

Mr. HOLIFIELD. TV comes through Comsat?