

smaller and more readily transportable terminals with 18-foot antennas. We now have a worldwide operational system with terminals in the Washington area, in New Jersey, Colorado, California, in Hawaii, Guam, Australia, Korea, Okinawa, Philippines, South Vietnam, Thailand, and in Ethiopia and Western Germany.

We have introduced a shipboard terminal with a 6-foot antenna, and have six of these at this time. They have demonstrated the communications capacity for which they were designed, but we are not yet satisfied with their reliability. Accordingly we are incorporating modifications to these terminals and only two are currently operational. As the improved terminals become available they will be used on major command ships such as cruisers and aircraft carriers.

Last year we initiated an improvement program to upgrade the capacity of the 40-foot terminals from two voice channels to 12. Nine terminals have been upgraded thus far. The remaining four terminals have a present capacity of five channels each. The equipment to upgrade them to 12 channels is not expected until this fall and actual deliveries will depend upon competing priorities and the resolution of a strike at the manufacturer's plant.

The reliability of the 40-foot terminals has continued to improve during the past year, and we now expect better than 90-percent terminal availability for most links. The performance of the 18-foot terminals has been good, but we do not yet have sufficient operating experience with them to predict their long-term reliability.

The IDCSP has been operational for about a year now, and it has performed some very important functions for the Department of Defense. It is primarily used to provide trunks for voice communications. It is also routinely providing "packages" of 16 teletype channels. On two occasions during the past year breaks have occurred in submarine cables. One disabled the Hawaii-Philippines cable, the other interrupted the coastal cable linking South Vietnam to Thailand. Each of these breaks required 10 days to repair and restore service. During those periods there was very heavy usage of the IDCSP links to carry high-priority traffic.

Another service which we have provided uniquely with the IDCSP is the rapid transmission of photographic images from South Vietnam to the United States. We can transmit high-resolution photographs at the rate of 6 minutes per frame, utilizing two satellites and four terminals. I have brought some typical transmitted photographs to show the committee at your pleasure, Mr. Chairman.

I would like now to discuss briefly the cooperative programs which we have undertaken with our allies in satellite communications. As you know, we are procuring two synchronous satellites, the SKYNET satellites, for the United Kingdom as part of the IDCSP.

There has been some slippage in this program. Originally the first launch was set for late this year. The program is now progressing satisfactorily and a first launch is scheduled for mid-1969.

The United Kingdom is developing and processing its own earth terminals and will control the operations of the SKYNET satellites after the U.S. Air Force has positioned them in orbit. Joint efforts are underway to insure the interoperability of the United States and United Kingdom satellites and terminals.