

(The information referred to was furnished and is being retained in the subcommittee files.)

CONTINGENCY COMMUNICATIONS

Mr. DAHLIN. Has anyone studied this function of providing contingency terminals in communications as a separate tradeoff sort of problem to see if it is done effectively or not? That is, different kinds of contingency terminals and how much total money and resources are being put in by each of the services?

Dr. TUCKER. The contingency capability that we anticipate with the satellite system is in many ways unique to the satellite system. There are some questions of tradeoff, certainly, with the development of transportable troposcatter terminals and so forth, but there are quite a number of applications in which the satellite terminals are uniquely capable of giving rapid deployment of online communications, so it is viewed primarily as an additional capability rather than as an alternative to other means.

TECHNOLOGY AND RESEARCH

Mr. DAHLIN. You talked about that in connection with the replacement of the North Atlantic HF channels. Didn't you mention that as one of the possibilities of a net kind of replacement? There are also developments in the trade, aren't there, and attempts to provide better communications in all these modes and those have to be traded off—

Dr. TUCKER. That is absolutely true. We have a variety of communication links or a variety of technologies which we can use and there is continuing progress in research and development and changes in the economics for all of these media. They certainly have to be considered as you make decisions where the best solution is to use the satellite system.

I think the progress in the satellite area has recently been most dramatic, Mr. Dahlin, because of the confidence in the steerable antenna which makes a rapid change in the economics for that kind of technology.

Mr. DAHLIN. As a related kind of technology there is a story in a recent journal, Journal of the Armed Forces, talking about "bandwidth compression" or compressed communications. Is DCA or the Department of Defense sponsoring any considerable amount of research in this area of "compressing" bandwidth, trying to get more use and channels out of it?

Dr. TUCKER. Oh, yes. It is a subject which has been of concern in the R. & D. community for some time. Defense has been active in considering bandwidth compression techniques.

Mr. DAHLIN. So far there is no danger anyone can "compress the bandwidth" faster than the development of other modes, I take it.

Dr. TUCKER. Any significant bandwidth compression will be utilized I suspect in most of the modes we are talking about. It means that you have the ability to transmit speech, for example, using less of the total bandwidth which is available in your system. If you make the investment in terminal complexity required to do that bandwidth compression, then you can gain in the capacity of the communications system which you are using so it is a very important tradeoff.