

Experimental Ionospheric Research (Section 5). - Progress was made on several phases of the project, "UHF Radiometer," in which measurements of solar and galactic noise are to be made. The turntable for a 31-foot parabolic antenna was erected and painted. The repair of a large aluminum mirror for the second Giant Wurzburg antenna was completed. These antennas are to be used as collectors of solar and galactic radiation at radio frequencies. The wiring of the two steel German cabins was completed. Trips were made to Evans Signal Laboratory, Belmar, N.J., and to the Chesapeake Bay Annex of the Naval Research Laboratory, to complete arrangements for the procurement of additional captured German Wurzburg antenna components.

A discussion of the progress on the project, "Radio Propagation Effects on High-Frequency Direction Finders," in which studies are being made of the characteristics of received radio waves, was held at Cruft Laboratory, Harvard University, Boston, Mass., on Nov. 7, 1947. Progress was made at Cruft on a pulse AVC and an improved intensity grid-gating circuit. At CRPL, a meeting was held with the Signal Corps' sponsors of the work in which it was decided that the immediate objective would be to start recording operationally phase shifts in the horizontal plane, with development of equipment for study of vertical angle of arrival and polarization to be carried on simultaneously.

A conference was held at Boston University on Nov. 6, 1947, to discuss progress and to make decisions on the course of future work on the "High-power pulse transmitter" project. This project is being carried on for the purpose of studying the propagation of pulsed emissions over paths which are influenced by the ionosphere. The high-power pulse transmitter was operated on a scheduled basis for observations by groups at White Sands, New Mexico, and at San Diego, California.

Field Operations (Section 7). - Mr. H. P. Hutchinson recently completed a field trip to a number of radio propagation field stations and associated radio propagation laboratories, most of which were located outside the Continental United States in the Pacific and Alaska. The field stations which were visited are located at Palmyra Island, Guam Island, the Hawaiian Islands, Manila, P.I., and White Sands, New Mexico. Because of the impending transfer of the field station at Adak, Alaska, to the Department of National Defense, the station at Adak Island in the Aleutians was not visited. Two of the associated radio propagation laboratories, at Stanford University, California, and the University of Alaska, were also visited, as well as Canadian ionosphere stations at Prince Rupert, B.C., Portage la Prairie, Manitoba, and the Department of National Defence at Ottawa. All of these stations are obtaining vertical-incidence ionosphere observations and a number of them are also obtaining field-intensity recordings over transmission paths of varying lengths. The variation in quality of the work by the individual groups was examined and the need for inspection of the stations established. Most of the measurements work is done under difficult conditions, and an instance was found in which an undermanned staff had been working seven days a week over a long period of time to secure observations that would

Information was given to the U. S. Weather Bureau, concerning the E layer and sporadic E at Clyde, Baffin Island, during the winter months.

Information was given to the Communications and Electronics Service Test Section, Army Ground Forces Board No. 1, Fort Bragg, N.C.; concerning the condition of the ionosphere which caused stronger readings of field intensity between Fort Bragg and Texas and New Mexico, at from 27 to 38.9 Mc, and between Fort Bragg and Los Angeles, California, at from 38 to 54.9 Mc, than between Fort Bragg and a vehicular radio set, 12 to 15 miles away. It is worthy of note that these results check closely with predicted values for November 1947, as given in CRPL-Series D, No. 36.

Final ionospheric data were received for the first time from a new Chinese station, Nanking. These data were for the month of September 1947.

Frequency Utilization Research (Section 4). - Messrs. K. A. Norton and W. Q. Grichlow attended the first meeting of the RTCA Special Committee SC33 - Testing Program for Long-Range Navigation Facilities. At this meeting, the committee examined the program which was proposed by the RTCM for comparing LF loran with LF omni. Several changes were suggested for the program, and methods of comparison involving "service areas" rather than "service ranges" were adopted. This approach was the one followed in the report CRPL-4-1.

The study of VHF and UHF range tests for the Air Materiel Command is continuing. Height-range curves have been computed for 328.2 Mc, and similar curves for 139.14 Mc are being computed. A letter, suggesting several tests designed to obtain more exact information on the equipment in use, was sent to the Air Materiel Command.

The VHF receiving antenna on the Northwest building, which was struck by lightning last August, was replaced. Field-intensity recordings are now continuing in the 88 to 108 Mc FM band of frequencies.

Mr. Norton introduced testimony and an exhibit (Report CRPL-4-3) at a FCC hearing relative to the reallocation of Television Channel No. 1, 44-50 Mc.

Mr. J. W. Herbstreit prepared a letter to the Editor of Nature on "The Frequency Variation of the Intensity of Cosmic Radio Noise."

Mr. Norton prepared the "Annual Review on Radio Noise," for the Radio Wave Propagation and Utilization Committee of the IRE.

Advice was given to Mr. G. T. Williams of the GAA, relative to wave propagation phenomena of importance in connection with the operation of the VHF omnidirectional navigation system.