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On April 20th, a meeting was held with USMC Captain Steinhauser to discuss results of tests of low-powered ground-to-ground communications equipment operating in the 2 to 12-Mc frequency band.

On April 23, a member of the Section attended a CCIR conference on radio noise.

The section chief continued to serve as a U. S. Delegate on the Provisional Frequency Board in Geneva, Switzerland.

Experimental Ionospheric Research (Section 5).— In the UHF Radiometer project in which observations of the radio-frequency emissions of the sun are to be studied, an operational test was made of the first completed installation, including the electronic and the mechanical equipment. The test indicated that the quiescent emissions of the sun at 480 Mc are sufficiently strong to overcome the receiver noise level. A "signal-to-noise" ratio of 3.8 was observed in a test which consisted of measurements of the output power of the receiver, with the antenna pointed at the sun and then pointed at open sky. The sun-tracking mechanism performed satisfactorily.

Mr. James Fozdar, a guest worker, from India, began work on the UHF Radiometer and allied projects.

Technical and constructional specifications were drawn up in co-operation with the Weather Bureau for the VHF radio-relay equipment which was developed for weather-telemetering applications. It is proposed to make arrangements for the commercial construction of several of these equipments which will be used for small-scale field-tests to determine their usefulness to the Weather Bureau.

Field Operations (Section 7).— On April 20, the FCO made quasi-peak field-strength measurements at the Sterling Radio Propagation Laboratory on the CRPL Model G-2 automatic ionosphere equipment. It was operated for the test at a fixed frequency near 20 Mc and measurements made at distances of 160 and 500 feet from the antenna. It was found that a large number of harmonics with rather large amplitudes were radiated at the distances given. A detailed report on the tests has been received. Two members of the U.S. Coast Guard Station, Hybla Valley, made aural tests (and wire recordings) of a similar nature at several frequencies below 20 Mc. These were also taken with the Model G-2 equipment operating at fixed frequencies. A report has also been received covering this test.

A number of height versus rf voltage measurements of vertical-incidence radio waves were made. Both a four-foot, single-turn loop antenna and a 20-foot horizontal dipole were used at 6995 kc. A maximum of electric field was observed when close to a quarter wave above the surface of the ground, as expected. However, complete cancellation of the electric field

at a half-wave above ground was not observed, indicating that apparently a random change in phase of the downcoming wave (vertical-incidence) was occurring in a period comparable to that of one rf cycle of the wave. Also voltages measured simultaneously at the center of a half-wave horizontal-doublst antenna and horizontal dipoles placed at a different height did not show the same variations in the instantaneous values of the received field. However, the average value of a number of readings did give a representative calibration of one in terms of the other.

The preliminary work on renewing of contracts and of obtaining estimates from the Associated Radio Propagation Laboratories for work to be performed in the next fiscal year was undertaken early this month. In this connection the President of the University of Alaska, Professor Bunnell, and Mr. Seaton of the University, visited the division and an agreement was reached upon which the contract will be renewed for another year. Budgets for FY 1949 operations were also received from several other Associated RPFS.

Because of interference caused by WWI, 4272 kc, to one of the CAA communication channels in the Los Angeles area, the transmitter was turned off March 30, 1948. A search was then undertaken to find a new frequency near 4272 kc so that absorption measurements on these vertical-incidence transmissions could be resumed; this proved to be a very difficult and time-consuming procedure. A suitable spot-frequency has not yet been found.

An inspection of the spare parts, assembled by Communications Measurements Laboratory for the Model C automatic ionosphere recorder they have contracted to manufacture, was made by Mr. H. G. Sellery, former chief of the Guam field station. The wire-wound potentiometers, generally, some mica capacitors, ceramic capacitors, the main auto-transformer and the primary power-voltage regulator did not meet either the NBS or the JAN specifications and were rejected. The complete results of the inspection were submitted in a separate report. At the request of the Section the Evans Signal Laboratory gave the NBS inspector very valuable technical assistance by allowing Mr. M. Abramson, their inspector, to visit CML and advise Mr. Sellery regarding components inspections.

Antenna layouts and dimensions were received from nearly all the ARPL and RPFS and are on file in the Section.

The FCC, in accordance with previous plans and upon request of the Section, discontinued the monitoring of transmissions from APAC, Churchill, Canada, April 30.

Assistance in the preparation of the specifications for the transmitters to be used at WWVH, Hawaii, together with other engineering information, was received from the High-Frequency Standards Section (14.8).