

Abstracts

Recollections on Microwave Theory

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The following is a somewhat personal retrospective and anecdotal recollection of just a small part of MIT Radiation Laboratory World War 2 activities, namely that facet which contributed to the development of the theory of the propagation of microwaves in waveguides. In 1941 had been doing graduate work with my advisor Dr. Ernst Weber at the Bklyn Polytechnic Institute on some perplexing aspects of the Sommerfeld problem of electromagnetic propagation over the earth. One Saturday shortly after Pearl Harbor, F. W. Loomis and I. Rabi visited the Polytechnic to inspect Dr. Weber's laboratory and to discuss the possibility of a cooperative program between the Rad Lab program and Poly; on Sunday with only a few clothes I was on a train heading for Cambridge and the Radiation laboratory. On Monday I was sent to Ed Purcell's group and he soon assigned me the task of understanding the effects of discontinuities in waveguides. This was then a minor effort of the group members who were concerned with understanding and designing 3 cm systems using magnetron sources, TR boxes, waveguide structures, and parabolic antennas. Many who worked in Purcell's group stayed for a short time to become familiar with microwave techniques and then passed on to groups more directly concerned with real radar systems.

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