

## Harold D. Webb, PhD.



Dr. Harold D. Webb was a pioneer in research regarding the once-secret technology of the “Radio Detection And Ranging” tool, or “RADAR.” In particular Dr. Webb was instrumental in determining the scope and execution of the post-World War II “Diana ‘Moon Bounce’ Project,” which was conducted at Camp Evans in 1945-1946. Dr. Webb was one of the two people present when the first radar signal was returned from the moon on January 12, 1946.

Dr. Webb received his BA, cum laude, in mathematics and physics from Franklin College, Indiana, in 1931; his MA in Physics from Indiana University in 1932; and his PhD in Physics from Indiana University in 1939. In 1942 he left his position as Head of the Mathematics and Science Department of West Liberty State Teacher’s College, West Virginia, to take a war-time Civil Service job at the United States Army Signal Corps, Evans Signal Laboratory.

In 1942-1945 Dr. Webb worked on several projects at Evans Signal Laboratory, including designing and building long-range low-noise radar receivers. In his memoir, Dr. Webb wrote: “By using low-noise triodes from Bell Laboratories we were able to build long range radar receivers with noise figures of 4db, rather than the 15 db

noise figures for receivers then in use. ... the 11 db improvement in noise figure was equivalent to an 11 db increase in transmitter power as far as radar range is concerned ... Our Research and Development Section at Evans built 6 low-noise radar receivers with built-in moving target indicators which were placed in the Pacific Theatre of Operation at about the time the war was over.”

After the end of WWII in August, 1945, Dr. Webb joined the “Diana Project” at Evans Signal Laboratory under the direction of Col. John H. DeWitt, which was aimed at finding peace-time uses of war-time processes and equipment. The Diana Project was developed as a means for reflecting radar signals from the surface of the moon back to earth, with a potential future use for broadcasting television signals. The first attempts at the project failed to receive radar echoes from the lunar surface while the antenna was looking over land. Dr. Webb pointed out that sea water is a better reflector of radio signals than is the land, thus making a larger antenna gain possible, and based on his calculations the project was successfully reconfigured with the antenna looking over the ocean at moonrise. Dr. Webb and his colleague, Mr. King Stodola, were responsible for making the receiver modifications and calculations that were necessary for the success of the experiment. The first attempt at contacting the moon using Dr. Webb’s revised approach was successful. The first reception of radar signals reflected from the moon was made about 11:00 am on January 12, 1946. Dr. Webb and a colleague, Mr. Herbert Kauffman, were the only people present when the first radar echoes were received. The experiment was successfully repeated several times.

Following completion of the Diana Project, Dr. Webb taught at the Electrical Engineering Department of the University of Illinois (Champaign-Urbana) until his retirement and remained a Professor Emeritus until his death in 1989.