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CONTRIBUTIONS IN THE FIELDS OF
COMMUNICATIONS SECURITY AND COMMUNICATIONS INTELLIGENCE

1. As Principal Cryptanalyst (1939-1940), Head Cryptanalyst (1941), then Director of Communications Research (1942 to date) I have had technical and staff supervision over a large staff (in 1945 amounting to almost 10,000 people) of cryptographic and cryptanalytic personnel working on many complicated problems in communications security and communications intelligence before and during World War II. My specific contributions in these two fields are briefly summarized below.

2. My contributions in the Communications Security field during the years 1939-1945 include practically all the systems and devices employed during World War II for cryptographic purposes by the Army and the majority of the systems and devices employed for the same purpose by the Navy and the Department of State. A detailed statement is attached covering the following:

a. Converter M-134 and M-134 A, covered by patent application (Serial No. 682,096) filed by the Chief Signal Officer in my name as inventor on 25 July 1933. This machine was the predecessor of the Converter M-134 C (Sigaba) and represented the first invention of electrical control, as distinguished from mechanical control of a set of cipher rotors in cascade, thus getting away from the regular or metric stepping of the rotors. During the important years 1939-1941 this machine was used for enciphering the bulk of the highly secret and confidential administrative traffic of the War Department in communications with the Headquarters of Overseas Departments, Corps Areas, Defense Commands, and headquarters of GHQ Air Force and 2d Air Force. In addition, it was extensively used by the Signal Intelligence Service in forwarding traffic from our intercept stations in Honolulu and Manila. It was also used during 1940 and 1941 for communications between the War Department and the U. S. Military Attache in London. In 1941 the War Department provided a number of these machines for the Department of State, for use in secret and confidential communications between the Secretary of State and the American Ambassador in London and these were used from 1941 to 1944 for that purpose. It was also used in a special circuit for a number of months in 1942 for direct communication between the President and the Prime Minister in London. After these machines were taken out of War Department service a number of them (29 or 30) were provided the Office of the Coordinator of Information (later OSS) for secret communications between Washington, London, and other capitals where the OSS maintained headquarters. Some of these machines are probably still in service.

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