

as otherwise it would literally tear our pants off.

We had a telegraph circuit that was interesting. It connected us with the San Juan office of the Insular Telegraph Service for accepting and delivering commercial ship traffic, for we were the only radio station on the island. It was a loop circuit which ran completely around the island, and we were but one of many stations on this loop. There was so much leakage on this circuit that we never knew when any other station was calling us unless the San Juan city office first notified us. Then we would have to adjust our main line relay until it responded to the calling station. Each station on the loop had its own main line battery, and each operator had to adjust his relay constantly to know whether he was being called or not.

Life at old "SA" in 1907 was a tough assignment, but it had its compensations. We had a fine bunch of operators, and the best mess on the island. We had many friends. We all had motorcycles. On Sundays, we exchanged visits with the plantation owners who kept us well supplied with the pick of the best tropical fruits I have ever eaten.

All of my four years in the Navy were happy, interesting, and instructive. They proved most helpful to me, both during my engineering course in college and throughout my after-life in radio work. It is interesting to note that practically every Navy radio operator whom I knew and worked with in those first days of radio in this country has become prominent in some branch of the science ever since.

For the information of old-timers who may have lost the record, and for other Navy men who may be interested, I append the following list of U.S. Navy Shore Radio Stations on the Atlantic Coast and in the Caribbean area, together with their call-letters as of 1904-1908:

PORLAND, ME.	"PA"
PORTSMOUTH, N.H.	"PC"
BOSTON NAVY YARD	"PG"
CAPE COD, MASS.	"PH"
NEWPORT, R. I.	"PK"
NANTUCKET LIGHTSHIP	"PI"
MONTAUK POINT	"PR"
BROOKLYN NAVY YARD	"PT"
HIGHLANDS OF NAVESINK	"PV"
CAPE HENlopen	"PX"
ANNAPOULIS, MD.	"QG"
WASHINGTON, DC	"QT"
NORFOLK NAVY YARD	"QL"
CAPE HENRY	"QN"
DIAMOND SHOAL LIGHTSHIP	"QP"
BEAUFORT, N.C.	"QS"
CHARLESTON, S.C.	"QU"
CHARLESTON LIGHTSHIP	"QV"
ST. AUGUSTINE, FLA.	"QX"
PENSACOLA, FLA.	"RK"
NEW ORLEANS, LA.	"RO"
JUPITER INLET, FLA.	"RA"
KEY WEST, FLA.	"RD"
DRY TORTUGAS	"RF"
GUANTANAMO	"SI"
SAN JUAN, P.R.	"SA"
CULEBRA, V.I.	"SD"
COLON, R.P.	"SL"

Prominent commercial coastal stations of the United Wireless Telegraph Company, as of 1907-1908, who handled personal messages as a courtesy for Navy ships in the Atlantic were the following: No. 42 Broadway, New York City "NY" - Bridgeport, Connecticut "BG" - Galilee, N. J. "G" - Atlantic City, N. J. "AX" - Cape Hatteras N.C. "HA".

Call-letters beginning with the letter P were later transferred to commercial wireless shore stations

along the Pacific Coast, while the stations of the U.S. Navy in this same area were given call-letters beginning with the letter T. Still later, when three-letter calls were assigned, the Navy stations of the Pacific were given NP as the first two letters, while on the Atlantic the first two letters were NA, thus making it easy to distinguish between the two coastal regions.

Upon graduation from Harvard in 1912, I joined the National Electric Signaling Company of Brooklyn as Research Engineer. My work with this company was devoted exclusively to the development of the Fessenden heterodyne for reception, using the Chaffee arc as a generator.

From 1913, to 1916, I was Pacific Coast Radio Inspector for the Department of Commerce with headquarters at San Francisco. The famous Ship Act of August 13, 1912, designed to promote the safety of life at sea, had just gone into effect, and it was during this period that occurred the long drawn out strike of the Radio Operators Union.

From 1916 to the Spring of 1918, I was Radio and Electrical Engineer with the Federal Telegraph Company at San Francisco, in which position I first assisted in the design of the high powered arc transmitters for the U.S. Navy, and then installed the 250-kw station at San Diego, and the 500-kw stations at Pearl Harbor, Hawaii, and Cavite, P.I.

Upon my return from Cavite in the Spring of 1918, I offered my services to the Army and was commissioned a Captain in the Signal Corps, O.R.C., and after a short period of duty in the office of the Chief Signal Officer in Washington, proceeded overseas in August and was at once assigned as Army Radio Officer, Second American Army, with headquarters at Toul, France, and continued in that capacity until the Armistice.

Returning to the United States in May, 1919, I served as Pacific Coast Radio Supervisor for the United States Shipping Board until July, 1920, when I returned to the Signal Corps as radio engineer in the office of the Chief Signal Officer. It was while in this position that Washington founded the Army Radio Net, later known as the War Department Radio Net, connecting the War Department with the nine Corps Area headquarters of the United States. In November, 1920, I accepted a commission in the Regular Army as Captain, Signal Corps, and became Officer in Charge of all Army radio stations, ashore and afloat. In 1927 I became Officer in Charge, Second Section, Alaska Communication System, with headquarters at Seward, Alaska.

Returning from Alaska in 1929, I was assigned as Radio Officer, Ninth Corps Area, with headquarters at the Presidio of San Francisco, and remained on this assignment until July, 1935, when I was transferred to Omaha as Executive Officer, Signal Office, Seventh Corps Area.

In July 1938, I was again assigned to the Alaska Communication System. In September, 1938, I was promoted to Major, and on June 12, 1941, to Lieut. Colonel, and became officer in charge of the Alaska system during its tremendous expansion under the emergency.

On October 17, 1941, I was transferred to Hawaii and was assigned as Department Radio Officer with headquarters at Fort Shafter, Oahu.

In January, 1943, I was ordered to South America where I was assigned as Theater Signal Officer, South Atlantic Theater, with headquarters at Recife, Brazil. During this assignment I was promoted to Colonel on June 16, 1943. By the beginning of 1944,

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