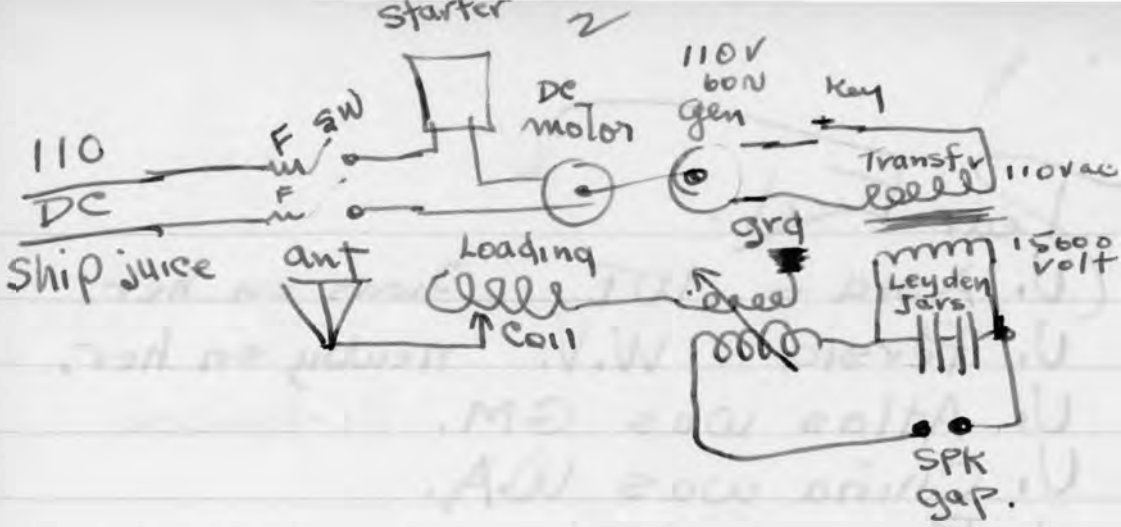


Dear Ed.

- U. Asia - WT. I was on her.
- U. Persia W.V. newly on her.
- U. Atlas was GM. no-union
- U. China was W.A.
- U. Beaver WB
- U. Bear W.D
- U. Ja. Chanstor N.V. I was on her.
- U. W.S. Porter assoil. BD,
- U. Falcon - GF. I was on her.
- U. President GW,
- U. Governor GV,
- U. Senator GS,
- U. W.S. Porter BD,
- Massie. - Rose City H2.

Those preceded by U, were originally equipped with United wireless junk, which consisted of a circuit as follows on other side:





At first we used noisy open spk gaps. The first innovation on this was a rotatory spk gap, a small improvement -- later a synchronous gap was designed which gave out the inspiring note of a saw mill negotiating a knot in lumber.

The first quenched gap I ever saw was one I installed on Borden's Schr. Macht, the Adventuress around 1914 -- at that time I was installing for Marconi. Sprado and Moorhead were my helpers. On the Pac. Coast the Navy

was the first to put radio on the air using 500 cycles instead of 60 cycles. This gave a musical note and was very popular.

About this time Federal Tel. came out with the arc which for the first time put out an undamped wave but with a hell of a lot of "mush" with it.

While working for Navy I dealt with arcs ~~so~~ a lot. I tried to eliminate the objectionable side interference then called "mush". This mush was eliminated simultaneously with the arc.

That was when we began creating CW with vacuum tubes.

Hell I talk too much!
Hubbard.