Telephony 101 – Polarized Ringers December 16, 2012

Hello All,

As always, please send any questions about the reading assignment directly to me at oldtimetelephones@goeaston.net. I will bundle questions if necessary, repeat the questions, and give answers in an e-mail to the TCI List Server before moving on to the next reading assignment. This way everyone will benefit from these questions and answers. By sending questions directly to me, we will avoid unnecessary clutter on the List Server. Previous reading assignments, notes, questions, and answers are available in the TCI Library at http://www.telephonecollectors.info/telephony-101/.

Please read the sections titled Watson's Polarized Ringer and Carty's Bridging Ringers on pages 37 and 38. Ringers are interesting, and we will take this chapter slowly because there are a lot of details and we have to introduce the concept of a condenser (capacitor). So we're going to break this chapter up into four pieces.

The first piece of this chapter is about the basic operating principle of all ringers. Ringers depend on Oersted's observation that a current through a wire creates a magnetic field – thus ringers are basically electromagnets. You just have to manipulate this electro-magnetic field a little with the field of a permanent magnet to make the ringer do the right thing. Notice how the electromagnets are given permanent north poles and south poles, whereas ac electromagnets by themselves go back and forth between north and south polarity. The ringer coils have been polarized, to use Watson's term. To me it's interesting how Bell, and hence Watson, latched onto the idea of biasing the alternating field of an electromagnet with the steady field of a permanent magnet – in a receiver and a ringer.

I think these two pages are pretty self-explanatory and don't need further discussion right now. Just take your time and make sure you understand these two pages. In the section on bridging ringers, low and high ringer impedances are mentioned. We will get to the exact values of these impedances in the last piece of Chapter 6 (later).

If there are any questions about the current reading assignment, we will deal with the questions before moving on to the next reading assignment.

Ralph