Telephony 101 – Early Commercial Telephones January 4, 2013

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/.

We have now completed Part One of the book on the development of components and are beginning Part Two on telephone instruments. Please read Chapter 8, Early Commercial Telephones, on pages 49-53.

This chapter covers the first 25 years of commercial telephone service. It was a period of almost no standardization in cabinet or desk stand design, and only a few samples of the most important telephones of this period are shown. For a more extensive discussion of these early telephones, see the beautiful photographs in a book by Richard Mountjoy (see p. 261 in the Bibliography of our book for a complete citation). Nevertheless, the component developments have already been described in Chapters 1-7, and the circuits in the earliest of these telephones were very simple – and are discussed in the present chapter. Other circuits will be discussed later in Part Three of the book.

Please dwell on the Williams' Coffin Telephone and keep in mind that this phone had the original Bell "telephones" on it. That is, the transmitter was of Bell's original induction design rather than the resistance principle. And the receiver was identical to the transmitter (talk in either one of them and listen in the other). This was Bell's elegant idea of what a telephone should look like (functionally, that is). No batteries at all! Widespread use of the Blake resistance transmitter did not come along until 1882, so the induction "telephones" had a long and important run of more than six years.

By the way, the coffin phone shown in Fig. 8-3 has the saw-tooth lightning arrestor that has been discussed so much recently on the TCI list server. The imprint on this phone below the magneto crank says "Made by Bell Telephone Co. 109 Court St. Boston."

Please make sure you understand the circuit diagrams in Figs. 8-4 and 8-5 as this style of diagram will be used throughout the book. There is always assumed to be another telephone on the line-side of the diagram to complete the circuit (think circle). In this case, notice that the telephone circuit in Fig. 8-6 could be connected to the telephone circuit in Fig. 8-5 and both telephones would work together. Intentionally or not, this was the beginning of a long tradition of designing telephones that are backward compatible with earlier telephones. This trend continues to this day, and with the possible exception of inserting a condenser (capacitor) to block unwanted direct current (dc), you can make almost any old telephone work on the present public switched telephone network.

After the transition from series ringers to bridging ringers, circuits became a little more complicated and were divided between local-battery circuits (batteries and magneto in each telephone or nearby) and common-battery circuits (batteries and ringing equipment in a central office). These circuits are described in detail in Chapters 15-19, so you will have to wait until later to resume our discussion of how more modern telephones work. In the following few chapters, we will concentrate on the appearance and advances in the design of telephone instruments, with telephones grouped by vintage and functional categories (more dessert and fewer vegetables).

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