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July 13, 1965

Mr. Grote Reber
C. S. I. R. O..
Stowell Avenue
Hobart, Tasmania
Australia.

Dear Mr. Reber:

Mr. Bruce Kelley kindly forwarded your nice letter of the 1st June criticizing the looseness of the technical wording of ^{the article on} the Logwood anti-squeal invention. I guess Mr. Horle and I were prone to think of the Hazeltine patent as a special case of negative feed-back. I always thought of the "unity-coupled" plate circuit transformer as a phase-reversal device which is suitable for negative feed-back. I agree the bridge concept has been accepted parlance in the trade.

Horle later developed a line of Federal receivers using a "bridge circuit" wherein the balancing took place using a dummy "tube" containing capacity-resistance simulating a nominal tube. The Ballantine-Laughlin-Ferris team ~~was~~ at R. F. L. had a very successful patent on an r. f. stage phasing circuit that was used on several hundred thousand early mains-operated Majestics.

Your reprint from the July 1959 I.R.E. Proceedings, in which you ~~expose~~ ^{writes?} the early Sargent Infradyne, first written about in 1926, was very interesting. I enclose an item written for the O.T.B. on May 16th which you will find interesting.

Best 73s from an OOT who finds our history of the art fb.

Cordially yours,

Charles C. Henry

Bruce writes "..... Now is the Outstanding Pioneer Radio Astronomer!
in the World!" Am sending Bruce a copy of my letter to you.

May 16, 1965

MORE ON DE FOREST-LOGWOOD NEUTRALIZATION.

While we have no one claiming to know of the existence of an early three-stage De Forest audio amplifier with the Logwood invention for inverse feed-back, we have some interesting background information. Mr. Wm. F. Cotter, chief of research and development at Federal Tel. & Tel. Co., 1922-25 recalls the Logwood claims in a letter to Charles Henry dated April 12th.

"Horle was Chief Engineer of De Forest Radio in the early '20s before he left there to devote full time to Federal. He was, of course, intimately acquainted with both de Forest and Logwood. Horle's story of Logwood's suppressing amplifier 'sing' was brought out in the ARMstrong-de Forest patent litigation. Such a scheme was used in the multi-tube audio amplifier built by the French in WW I. Hazeltine's patent was of a different order. The principle of negative feed-back could not be patented. All Logwood had (and it WAS something) was a capacitor connected between grid #3 and grid #1. Hazeltine's patent comprised a winding at substantially unity coupling to the second stage input inductance which fed, through a small capacitor, a voltage opposite that of the voltage appearing by plate-grid positive feed-back on the #1 grid..... Don't forget, too, that Hazeltine's patent was beautifully promoted."

(Bill is retired and lives in Canadaigua, N.Y.)

An article submitted to the O.T.B. by C.C. Jensen