

*THE ARRL HERITAGE MUSEUM*

Presents

**THE HISTORIAN'S VIEW-Reminiscences'**

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**Chapter six(A)**

**Revised 5/1/2017**

*Reminiscent Radio Tales \*By Clarence D.Tuska*

Transcription of talk delivered at the Olde Tymers' Radio Banquet of Hartford County  
Amateur Radio Association February 27, 1937, at Hartford, CT.

*A Glimpse into the early era of wireless in the United States*

“About 1907 in Nyack, New York, a spark coil, a spark gap of one-inch brass balls, and a small dipole antenna (a dipole, mind you) and perhaps a few test-tube condensers were more or less properly connected as a transmitter. Time dims the exact distance but some ten or twelve feet away a second dipole antenna, a coherer, a decoherer and a relay were arranged to receive signals from the aforementioned transmitter, and, what is more important, sometimes the receiver did perform its intended function.

A real outdoor antenna took the place of the small dipole. An E.I. electrolytic detector, a tuning coil and telephone receiver were substituted for the coherer and the like. On occasion, wireless signals were heard from the Brooklyn Navy Yard some twenty-five or thirty "huge" miles away. Signals were exchanged with a brother experimenter about half a mile away. Gradually this wireless station improved and then, for better or worse, in the height of its glory, it moved to Hartford, Conn.

In 1908-1909 Hartford boasted of a wireless mast out Barbour Street way. Of course it wasn't much to boast about because that was all that there was to show for the wildcat financial dream of the old defunct DeForest Wireless. Your story teller, about as soon as he could, made a pilgrimage to that mast.

The *Electrical Experimenter* indicated that these were other wireless experimenters in Hartford. Yes, there was even a club which had its headquarters at Harry Chapman's home on Wethersfield Avenue. Your reporter forthwith paid a visit to the club headquarters. Harry was not at home but his younger brother proudly showed the station. And what were displayed? Why, a loose-coupler and a mineral detector! And the former? Well, it was a step forward over the tuning coil. And the latter? Why a mineral? Hadn't Hartford heard of the famous E. I. electrolytic? The newcomer was to learn fast and soon.

His youthful impatience could not be restrained. The wireless station was soon installed at 136 Oakland Terrace. What a rude awakening he had! The microscopic Wollaston wire in the electrolytic just would not withstand the onslaughts of the currents induced by the alternating current lighting system. A mineral detector and that superior pair of telephone receivers just had to be procured, but where.

He started shopping. There was no such thing as an exclusive wireless shop. Tracy, Robinson & Williams might have something but that was a hardware store. They had bare copper wire, aluminum wire, and an assortment of brass rods, sheets, and strips. The Baldwin & Stewart's electric house was discovered, with its old telegraph key and sounder, probably Mesco, and once a salesman sold them some 75-ohm 'phones and some wireless something. There was an electricians' headquarters on a street which extended from Asylum Avenue to Pearl Street. The electrician had something but the only impressive thing about that was the price. One resorted to mail order and an occasional trip to New York but the absence of a proper local supply was a distinct drawback.

About 1910-1911 there blossomed the youthful partnership of Ball & Tuska. Bill Ball was a grammar-school and high-school classmate of Tuska. Bill knew how to buy enamel-covered copper wire in six-pound spools from a plant in Windsor, and Tuska persuaded Brandes of

New York that telephones could be sold in Hartford if Brandes gave the firm of Ball & Tuska a 20% discount in lots of six sent c.o.d. Mrs. Ball, Bill's mother, could make swell pies but she must go down in history as a banker. She could always dig up some ready cash out of a cracker jar, which adorned a shelf in the little house on Vine Street in Keney Park, and that released many a shipment of six pairs of Brandes.

The partners even manufactured apparatus and installed complete stations. Tuska constructed one set in 1911 which made history. In a small whitewood box, stained brown, he installed a single-slide tuning coil. The coil was of hexagonal form, extended the length of the box, and was wound with enamel-covered wire. A mineral detector and a single telephone receiver on a leather-covered headband completed the outfit. This brown box set was consigned to Harris Parker's toy store which was on Asylum Street. Harris Parker displayed the set in the window.

In a few days it was gone and Tuska, assuming it was sold, went to Mr. Parker to collect the agreed price of \$5.00. What a blow fell! A gentleman, Hiram Percy Maxim, had become interested in the wireless and, after looking all over asked if he could take the outfit and if satisfactory he would pay for it, and if otherwise he would return it the following day. He had taken the set and returned it. Since Mr. Maxim was an inventor it must be that the set was no good, explained Mr. Parker.

Tuska was upset about the affair because he knew the set was all right if you connected it to an aerial and adjusted the detector. The tuning could hardly be called critical and you could hear a few commercial and amateur. It really didn't make much difference how the tuner was adjusted but the detector was critical and demanded patience. Tuska told the story to his mother who urged him to go out and tell the man just what the trouble was. Well, it took a great deal of persuading but, reinforced with Bill Ball and each dignified by their long pants which came with graduations from the Northwest Grammar School in 1911, the pair set forth for 550 South Prospect Avenue where Mr. Maxim resided.

One of the pair rang the doorbell, and Mr. Maxim himself answered. He was in the early forties. His hair had just begun to turn gray. One of his garters had become unhitched ; it

trailed behind, and obviously needed attention. Funny, isn't it, how little things like that become engrave in the memory? After they introduced themselves, Mr. Maxim invited the partners in.

Tuska acted as spokesman. Harris Parker said that Mr. Maxim said the set was no good and they wanted to know why. The set had been operated; it had received signals. Of course, an aerial was necessary, and the detector just had to be adjusted. Well, Mr. Maxim explained, 'I did not tell Harris Parker that the set was no good. I simply told him it wouldn't do. It looked too much like a toy and wanted a bigger set.

Mr. Maxim had no experience but he was interested and wanted a good receiver. The sender could come later. The grand young firm of B & T rose to the occasion and told what they could do if given carte blanche. Mr. Maxim should have a loose-coupler, a tuning condenser, a silicon and a galena detector and a pair of Brandes 'phones. B & T were told to write out their proposal. They did, received the order, made and purchased the apparatus, and finally installed the station. It was accepted and the bill was paid, but that was not the end; it was really the beginning.

Mr. Maxim was then in the novice class. Ne needed some instruction. Tuska worked with him and spent many an evening instructing Mr. Maxim and his son. Hiram Percy Maxim learned quickly and was soon the owner and operator of a full-fledged amateur wireless station. His son Hamilton Maxim was then about twelve years old. His younger mind outstripped his father's in learning the code, and he was a joint operator of the station, which was known as SNY. What, just plain SNY? Why, yes; you see, this was before the federal wireless law of 1912. Some of the amateurs in Connecticut and Massachusetts picked the prefix SN, perhaps for Southern New England but more likely for the rhythmic sound in the wireless code. In any event each amateur just picked any additional call letter that either suited his fancy or pleased his ear. Did someone inquire "What about wave lengths?" Oh yes, they were present, most of them from several hundred meters downward.

There was that good old commercial station SLI, the Telefunken station, at Sayville, L. I. probably their main wave length was several thousand meters. SLI sent press news broadcast

for ships at sea and many of use cut our "code eyeteeth" on those press broadcasts. That old SLI laid down a field strength in Hartford that still provokes a thrill. On a good night SLI could be heard thirty feet from the earphones, and just earphones, for there were no amplifiers of loudspeakers in Hartford in regular use in 1912.

But let us get back to our story. About the year 1912 or '13 Tuska made a contact with J. F. Arnold of New York. Arnold -see the old magazines -was famed for his Navy-type loose couplers. How many can remember those couplers with their shiny mahogany base, green silk wire and bright nickel work? Some of Arnold's couplers were arranged with the primary coil housed in black hard rubber. Perhaps Arnold was equally famous for his audion detector boxes. The box was approximately seven inches square and seven inches high. Like the coupler, it was made of mahogany. The audion bulb was mounted in a nickel-plated gooseneck fitted with a screw socket which contained the filament connections. The grid and plate were respectively green- and red-covered wires with extended from the audio bulb and were connected to a pair of suitably-marked binding posts. B batteries, a grid condenser, grid leak, and a filament rheostat were located within the box.

Maxim bought from Tuska one of the Arnold audion boxes and still used the Ball & Tuska coupler. His transmitter had kept pace with the receiver growth -passing through the stages of spark coil on batteries, spark coil on power, a transformer, a rotary gap, better condensers and a loose-coupled inductor to comply with the regulations of the then-recently-enacted federal law controlling interstate wireless. The law also brought shorter wave-lengths for amateur transmitters and licenses for stations and operators.

While the old firm of Ball & Tuska was dissolved, the Maxim-Tuska friendship grew. His father having passed on, Tuska took his troubles, inspirations and problems to the elder Maxim. Maxim spent many a Sunday morning at 136 Oakland Terrace discussing amateur radio with Tuska. On one evening, after a discussion by wireless, Mr. and Mrs. Maxim elected to walk over to Oakland Terrace to examine the combined Arnold coupler, variable condensers and audion, which Tuska had bought for Leonard Fisk, Senior. That was an event: imagine a wireless receiver that cost nearly \$100 without amplifiers or 'phones! One of those 1912-1913 Arnold beauties recently turned up in a radio museum. On not

infrequent visits a very young lady, Per Maxim, now Mrs. John G. Lee, came with her daddy and tried patiently )?) to look at funny pictures, while the Maxim-Tuska conference went on and on.

Quite often the Maxim family took the youthful Tuska with them in their Franklin car for a ride, a picnic, or a swim. It was in Mr. Maxim's office on Huyshope Avenue, the latter part of 1913, in the presence of Miss Cecil Powell, that the relay idea was poured forth, stories to the contrary notwithstanding. And to avoid any possible misunderstanding your raconteur, Tuska, will now use a few I's.

I said to Mr. Maxim, "Hartford can work Springfield, Springfield can work Dean Lewis in Northampton, and he can work Robert St. James in great Barrington. St. James probably knows an amateur between his station and Albany, and through that Utica, Syracuse, Rochester and Buffalo. Why don't we organize such a relay chain and if there are weak links we can strengthen them by the knowledge gained from the stronger stations. It will be a lot of fun." He replied, "Well, Clarence, if you can carry the relay to Buffalo, why stop there? You can reach Chicago and maybe the Coast. If it is a good thing for a Buffalo relay, it is a good thing for the whole country." That was the true start, although he quoted words may not be the precise expression of each of us. Before I discussed my proposal with Mr. Maxim I had asked my uncle, Mr. George Ruddell, who lived with us part of that time and was interested in my wireless, what he thought of the plan. Mr. Ruddell thought I should discuss the relay idea with Mr. Maxim and, incidentally, later aided me in arranging the call book, the station certificate and our first ARRL map, which he drew for us. The relay idea was discussed by Mr. Maxim and myself but without bearing fruit until some months later.

I did want to tell this story in chronological order. At this point I should begin on the story of how the Maxims, father and son, and Tuska studied for their commercial operator's license examinations. The examinations were passed in the Navy Yard in Boston on the last day of the year 1913. I did want to tell that story, for the yarn might be worth spinning, but time just won't permit. Some day it shall be told along with others.

Quite proud of their first-grade commercial operators' licenses, Maxim and Tuska decided that they were justified in stepping forward with a proposal to reorganize the remains of the old wireless organization of Hartford into a new radio club. In the early part of 1914 the Radio Club of Hartford was formed. A few of the organizers included Sam Miner, Bob Miner, David Moore, Ray Woodward, Mr. Maxim and Tuska. It was in this club that we found the vehicle for which we had waited. A committee which consisted of Maxim and Tuska was appointed to consider the formation of a relay system.

In the spring of 1914 I prepared a rough draft of an application blank. This I submitted to Mr. Maxim, who offered some additions and amendments. Out of our joint efforts the form of the application blank was brought forth. We had envelopes addressed to every station owner included in the "List of Amateur Radio Stations" published by the government. Miss Cecil Powell not only did that job but numerous invaluable others and finally became a licensed amateur operator. The application form, which had been printed, were enclosed in the addressed envelopes and duly posted. The replies came to my house on Oakland Terrace. All of the routine correspondence of the organization, which was known as the "American Radio Relay League", I handled as secretary. Letters which had a special interest or might affect our policies, I discussed with Mr. Maxim. I can't pass by Ethel Reardon, now Mrs. George Herriott, without reciting what a faithful helper was in those early days.

The membership of the A>R>R>L> grew steadily. The advent of the Armstrong regenerative receiver greatly increased the service range of amateur stations. I recall that Mr. Maxim and I went down to New York to hear Armstrong lecture. I believe it was one of Armstrong's first public lectures on the regenerative audion. Just as the Armstrong circuits represented the beginning of long-distance amateur communication, so the League represents the start of organized amateur radio communication.

It has been incorrectly stated that QST was offered by Maxim and Tuska as a means for supporting the League. The fact was that I objected to our irregular and infrequent publications for the League members. I felt that a regularly-circulated publication was the cement which would be needed to hold the League together; relaying messages was not enough. Maxim's older head saw and foresaw difficulties I would not admit in the spring of youth. My only concern was

getting enough material to fill the proposed sixteen pages. At least Maxim let youthful recklessness have its way and subsisted me both financially and editorially. It was strictly a joint enterprise. I must point out that it was not a financial success prior to the war and probably because of the war. If it had not been for the generous credit extended by Harry Chapman's father, who was or printer, QST probably would have failed to survive the struggle for sufficient and steady advertising to pay the bill. Later QST did come into its own as you all know, but not until after the persistent efforts of its present editor, K.B. Warner.

It is with great satisfaction that I look back on our efforts. I feel rewarded for the long nights and troubled days that were so often encountered during the early period. I feel that Mr. Maxim looks down, from the Heaven where he must be, with pride on our joint efforts. As I get older I realize that there must have been many, many times when he was impatient at his youthful partner. But after all, combine the reckless spirit of youth, the foresight and conservatism of maturity, and a dash of good fortune - and success may smile upon you."