

Radio History

Introduced by Stanley Adams

The Story of WOR's Original Transmitter

One of Stan Adams' hobbies is collecting information about and pictures of some of the oldest transmitters used in broadcasting. A discussion about one transmitter was interrupted by an amazing email and historical document. We asked Stan to tell the story.

[MEMPHIS, Tennessee] I have this strange habit of studying the history of early Western Electric transmitters, and there appears little that modern science can do to correct this horrible fate.

A FORTUITOUS EMAIL

It was during the late winter and early spring of 2005 when Barry Mishkind and I were musing over the early history of Western Electric broadcast equipment, some of which he has on display at his web site—www.olderadio.com. And then a wonderfully strange thing occurred!

One of the pages we were discussing dealt with WOR radio. Some pictures of WOR's early transmitter facility had been supplied by WOR CE Tom Ray. However, during one exchange, I noted there were inaccuracies in the captions of some of the pictures.

While this sharing of this history was going on, Barry decided to "lay on me" an unlooked-for email directed to him from Cliff Uzmann of New York City who also took issue with the same pictures of the WOR radio transmitter that prompted my original discussions with Barry.

However, Cliff not only questioned the accuracy of the photo description, but included some pictures with a story from his own grandfather, George Uzmann, wherein the "correct" description of the first WOR transmitter was made known. Talk about strange and wonderful coincidences! (Barry has explained this strange thing as something that "happens" to him from time to time – almost a "manna from heaven" scenario).

EYEWITNESS ACCOUNT

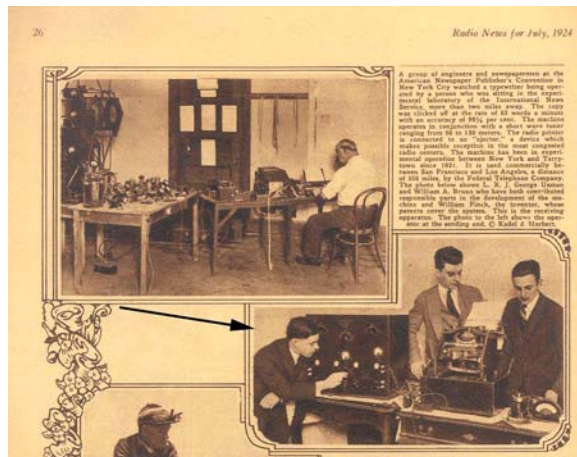
Uzmann was apparently a writer of a number of articles for the New York Sun Radio Section, the paper being affiliated with the early workings of the International News Service (started in 1909 by W. R. Hearst). INS later became part of United Press (of Scripps-Howard birth) and thus came the United Press International with which we have all been familiar.



George Uzmann. His grandson Cliff shares this picture and the text: "In Memory of my grandfather George Uzmann who dedicated his life to the developing world of radio."

In speaking with George's son, Cliff Sr., who is about to turn 75, I was informed that his dad was considered a ship wireless expert at the young old age of 18. He was a

compatriot of Harry Houck (of E. H. Armstrong and Measurements Corporation fame). Uzmann traveled much of the world as an early shipboard operator and in later life worked as a press person. He was also a writer.



George Uzmann was the right man at the right time to help us to tie together some of our early communications history and I thank young Cliff and his father with sharing this important family story.

Cliff Uzmann writes: "The following story was written by George Uzmann who wrote the radio section for the New York Sun in 1929. A note from the editorial department reads 'please hold till our situation clears up.' I found this among some of his many personal letters and articles from that time period. I believe that this paper will be of some interest to those who enjoy the history of the radio today."

For my part, I think it is also especially fitting that we introduce this story in the same season which introduced the commemoration of Howard Armstrong and his monumental FM invention.

There is absolutely no other possible way, in my humble opinion, but to let George Uzmann, himself, tell the story of the first WOR transmitter. (The following words are those he typed for a 1929 edition of the New York Sun—transcribed, but otherwise essentially unedited as they echo to us over 76 years.)

WOR'S FIRST TRANSMITTER

by J. George Uzmann

Lounging away in my easy chair and smoking, as usual, while listening to the evening's radio productions, I stopped a while to enjoy a WOR feature. Shortly before midnight on Washington's Birthday an announcement was made to the effect that WOR would hold an informal birthday party in recognition of the entry of that station's eighth year of broadcasting. The listening in invitation proved intriguing, and I settled back to a comfortable position to enjoy it.

WOR, like old WJZ, together with the principle transmitters within the Metropolitan area, I well remember back to the first days of their operation. I looked backwards to the original tests conducted on the low powered WJZ transmitter installed in the Westinghouse E. & M. Co. Newark plant, while their engineers endeavored to let a favored few hear results of the Dempsey-Carpentier fight in Doyle's Thirty Acres back in 1920, and then to think of the rapid strides since made, is to know that these few years have spelled a radio life-time.

And so it goes with WOR, too. Mr. J. Poppele, Chief Engineer of WOR, pointed out during their birthday party that the station originally went into operation with a transmitter such as today might be considered a mere play-toy. He briefly mentioned that it consisted of two 250-watt

tubes; and a reception report saying that their signals were heard in Connecticut brought untold joy to the staff.

"The Old Transmitter" story provided interest to the writer; for he too coaxed the "old brute" along many a night in effort that its transmitted signals might be heard at distant points. And with this thought in mind let us look over the historical background of the first WOR transmitter.

Today WOR operates a standard five K.W. Western Electric Company transmitter. Its signals frequently carry to all ends of the country while a friend of the writer's generally reports good reception as far East as the English Channel. The quality of transmission is likewise of the highest character and perhaps only a few transmitters such as the new 50 K.W. Crosley and 3XN, Bell Laboratory, Whippany, N.J. stations, which employ so called 100% modulation systems, are theoretically capable of producing better quality.

The present WOR installation is the third transmitter, if the writer is not mistaken, employed by that station. The first one was of 500 watt rating, but ratings back in those days meant little. The second consisted of a standard 500 watt Western Electric set which was operated for several years until its present five K.W. equipment was installed at Kearney, N.J.

Now let us go back to the original transmitter and compare that little "bundle of junk" with present day apparatus. Of course, the complexity of broadcast transmitters has gone through the same growing pains as receiving equipment. Once a crystal or single tube receiver together with a pair of head phones made up a "set" – now think of our present day broadcast receivers with their six to ten tubes, their complicated circuits, etc. and we have a picture of the rapid strides radio has made in less than a decade. But let's not get away from our WOR story.

While WOR was one the very first stations within the New York City district to transmit, I do not recall ever seeing a photograph or other descriptive matter covering their first transmitter. And since Mr. Poppele rightly mentioned its atrocious quality of transmission, the writer feels that the following remarks may prove interesting reading material.

For the first year or two of broadcasting, commercially built sets could not ordinarily be obtained before the Western Electric Company developed a 500 watt unit. The de Forest Company, on the other hand, manufactured several experimental models and it was one of these that made up the early WOR transmitter. It continued in operation until their half K.W. Western Electric set was installed. The new transmitter completely overshadowed the old in quality of transmission, distance, etc. "The old set" was then sold for what it would bring and it brought plenty even back in those early days.

In Figure 1, we see what the original WOR transmitter looked like. The photo shows its utter simplicity, and is complete with the exception of the microphones. A few weeks after going off the air on WOR's wave – 360 meters – it was purchased by the International News Service and again placed in operation, not as a voice transmitter but for telegraphic code signal work. Its day as a broadcaster finished up with WOR; but for a considerable time afterwards the writer employed the same transmitter in conjunction with development work and for which purposes it gave good results.

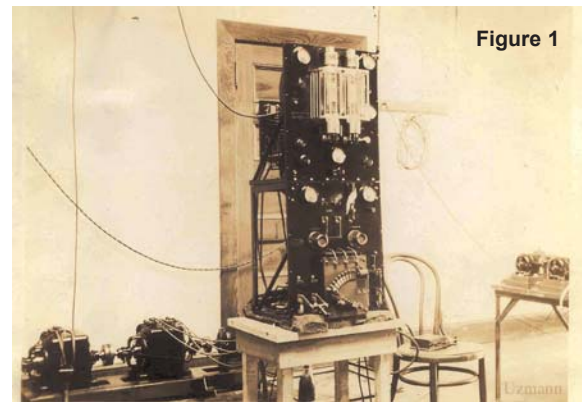


Figure 1

WOR's DeForest Transmitter

Re-installed at 59th Street and Broadway, New York City, the photo shows how simple the apparatus of "modern" broadcast transmitter was back in 1921. This early de Forest Company development employed two 250 watt

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transmitter tubes, which received plate and filament energy from the three unit motor generator, seen in the background, developing 2000 volts D.C. for the tube plates and 20 volts D.C. for the filaments.

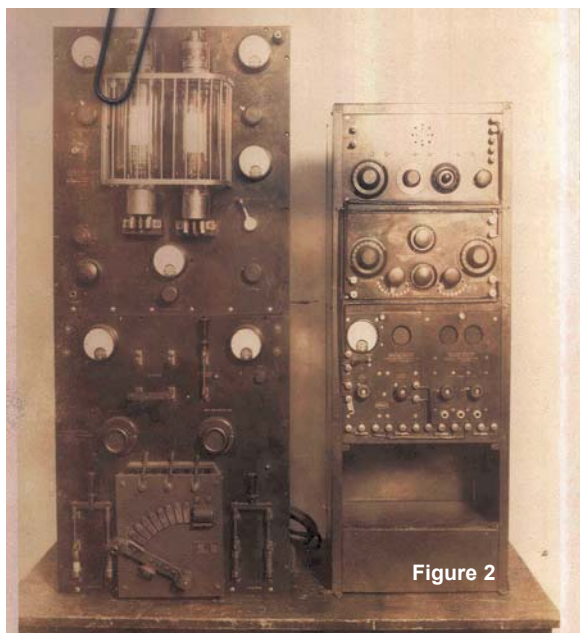


Figure 2

The DeForest transmitter and receivers.

To place the "plant" into operation, one need only to close a supply switch and pull up the manually controlled motor starter. Then the station was "on the air." The little

cam-box seen on the chair was the counterpart of the present day "control room" – the two cam positions determined which of the two microphones were in operation; or another adjustment placed the set as to adjust the circuit so that it would function as a radio telegraph transmitter. You see from the photo that a so called "technical staff" was hardly necessary back eight years ago because the circuits were [of a] most elementary order. The panel was about 24 by 60 inches; controls were few and a quick glance at the six small meters told the story.

Compare this work with present day apparatus employing pick-up equipment and amplifiers, line compensators or "pads," speech amplifiers, monitors, oscillators, modulators and power amplifiers; now add a number of motor generator sets, storage battery, power and supply switchboards, and we again note the rapid advance made in the art in less than ten years.

Once the old transmitter moved away from New York City and was taken up to Yonkers. A close-up of the transmitter together with an associated piece of apparatus is shown in Figure 2. But it soon returned to New York City, where it remains today and is still in operation, good as the day it was built as a continuous wave transmitter operating at a wave length of approximately 1100 meters and never again shall it broadcast "this is station WOR, Newark, N.J."

J. Geo. Uzmann,
439-78th Street,
Brooklyn, N.Y.
March 1, 1929

EPILOG

What a truly unique picture of the early years of both broadcasting and communications!

This early transmitter was more than likely built at the Highbridge (2XG) shop of Dr. de Forest and was sold with the 1D (250 watt) tubes. It was in this time frame that Dr. de Forest left the northeast for the far west of San Francisco, where he opened his own experimental shop and retail outlet.

de Forest furnished similar transmitters during the early 1920's to some of the first stations along the west coast. He was able to build transmitters rated up to one kilowatt in power. But let it be noted that the ratings were not reliable ratings for these early modulated oscillators.

It was not long before RCA introduced their UV204 triode which helped to improve the quality of power and Western Electric soon sold WOR a WE 101A transmitter (500 watts). Just a few years later the transmitter became a WE 105B making WOR a 5 kW station. With the improvements from Dr.'s. Heising, Colpitts and later Doherty, among many others, there was no way that Dr. de Forest could continue in the radio business and subsequently he took this opportunity to begin his work with "phonofilm."

Jack Poppele was the Chief Engineer of WOR and an early radio expert. A collection of papers, which are based on an oral history, exist at Columbia University as part of the WOR Project. They detail much of Poppele's work. He was a long time member of the Radio Club of America.

The son of a Cincinnati broadcast engineer, Stanley Adams is a systems specialist with Sprint in Memphis, TN. If you share his interest in older transmitters, you can contact him at: stanleybadams@yahoo.com

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