The Bald Letter

FREE FOR THE DURATION

June 24, 2020

Photo by Mike Adams
Used by permission

A deForest Audion from the collection of Mike Adams of the California Historic Radio Society- See the details on Page 3

Wired Radio - Edition #5

The *Bald Headed News*

2020 Virus Edition #5

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This is the fifth issue of a fun history hobby e-letter. Share it & pass it around. It's for fun. No commercial content or intent.

The **Bald Letter** is the work of Dick Karman who is solely responsible for its content. He would welcome your comments, complaints and corrections. dick@karmans.net

While we stay at home a little longer let's read and enjoy memories of radio. Special thanks to Mike Adams and the members of the California Historic Radio Society, author John Dunning, Sonny Clutter: *The Radiola Guy*, members of the Colorado Radio Collectors Antique Radio Club for help getting the word out, Howard Mariotti and members of the New England Vintage Electronics Club and the late Carleton E. Morse

Stay Tuned. If we're still healthy in two weeks we'll start putting another issue together. If I'm not healthy I'll view it as a momentary light affliction preparing me for an eternal weigh of glory. 2 Corinthians 4:17 [DK]

The Gas Pipe Radio

In the 1960s when your editor was "doing time" on a small community radio station in the Puget Sound area, the dream was always better coverage, larger audiences, and eventually a real license. You see the station was what was known as a "carrier current" station. I was only a voice on a tape (I pre-recorded my midnight to 3 am shows while I was looking for a "real job"). The other young men who fancied themselves "would-be" radio engineers were trying to distribute the signal on water pipes in a small town on a hill in western Washington State.

I was told that carrier current worked on power lines only until the line reached a transformer, and those were quite prevalent in our small community. Since we had no natural gas service in town until 30 years later, they tried the water pipes and mains. I thought they were crazy. But now I know better.

Looking back in history, our forefathers came up with the idea in the 1920s. Telephone lines in those days literally went from each subscriber's "instrument" (telephone set) to the "central exchange" for that company. Two wires from every house in the town, to one building. That was a lot of wires.

When it was clearly understood that radio was being transmitted on different frequencies, yet on the same "ether" it was asked, why telephone conversations couldn't be assigned different frequencies on the same wire. A fascinating discussion of this technology was found in ***Radio News*** in 1926. You can read it (page 5). It did not stop at telephony, it went on to include radio entertainment, news and sports, using carrier-current system for delivery to homes on a subscription basis.

It was not leased telephone lines such as radio networks, Muzak, or Ticker services. It was broadcasting such as Brown University did in 1936, with programs transmitted throughout the campus over the steam heating pipes.

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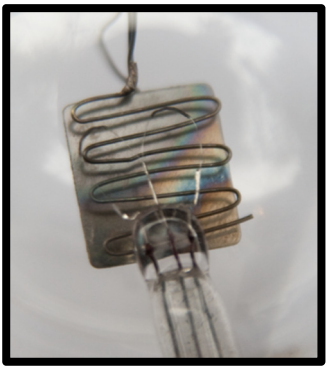
[By the way, your editor left broadcasting, such as it was, and got a degree at Washington State University even before it had an Edward R Murrow Communication Center, but he never returned to commercial broadcasting.]

Quarantine Show and Tell

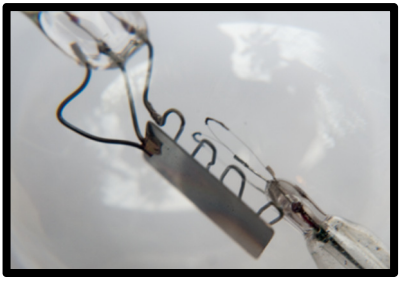
By Mike Adams, CHRS Chairman

A few weeks ago I received a call from a researcher at a Canadian museum. It seems he was doing a story on wireless inventors and he had a photo of a de Forest Audion but no permission to reprint. I told him I would send him photos of the tube and he has my permission to use them. He also asked another strange question: Is it a reproduction Audion or real? I didn't realize there were fakes out there, I never looked at the marketplace/eBay for that sort of thing. I am but a poor retired professor.

So when Dick Karman asked me if I had a piece of history and "a real nice photo," I immediately thought about the Audion and my previous life in Venice CA. Little did I realize when searching for the "King of Battery Sets" for my 1985 PBS series *Radio Collector* that he was living a few blocks away in our quirky coastal enclave. We became lifelong friends and I surely learned about battery sets (you know the ones you paid thousands for, that today are worth hundreds).



Fast forward 27 years to 2012 and I was gathering images for my de Forest book. This presented an opportunity to visit the old neighborhood and 'the King', both a little grayer. My task was to photograph his collection of de Forest stuff, radios, amplifiers and transmitters, and Audions. I am very careful when I take pictures, but a round glass tube is a special problem: reflections from any odd or direct light source. I use a Nikon D-800, 35 megapixel, and I always shoot raw. For the tube, a close-up lens, and always a tripod. I set up a table outdoors and mounted a white sheet for a background. The light was Venice fog, so soft light, nothing to detract from the beauty of the tube.



Here are some photos of a later Spherical Audion, more or less 1908, excess gas and all. I wanted you to see what a grid looked like. And you can see that while the filament appears intact, some of the coating has fallen off. Less electrons.

Meet Mike Adams

Mike is not only the board chairman of the California Historic Radio Society, but has been a top-40 DJ in the 1960s, and a film maker. While a professor at San Jose State University he served as the Radio, Television. Video & Film Department chair and the Associate Dean of the College of Humanities and the Arts. Currently he is professor emeritus. He created radio history themed programming for PBS including "Radio Collector," and "Broadcasting's Forgotten Father." For his broadcast history research he received the AWA Houck Award, the RCA Ralph Batcher Award, the TCA Stokes Award, and he is a CHRS History Fellow. He is the author of 7 books, Including *Lee de Forest, King of Radio, Television, and Film* , Springer, 2012, and *The Radio Boys and Girls*, McFarland, 2015.

(See more and his YouTube documentaries at Mikeadams.org)

Wired Radio

From Radio News, October 1926

DURING the last few years communication engineers have made considerable headway in the development of "carrier-current telephony systems," better known under the more popular name of "wired radio." Very little information relative to these systems has been published in radio and electrical periodicals catered to by the radio fan; probably for the reason that no great interest has been shown. Evidently the whole matter sounds too commonplace to the average person and offers no more novelty than the house telephone.

Had the first strains of music been broadcast to the general public over electric light wires, instead of "through the air," the reaction might not have been great enough to put in motion a wave of popularity such as "space radio" has been favored with.

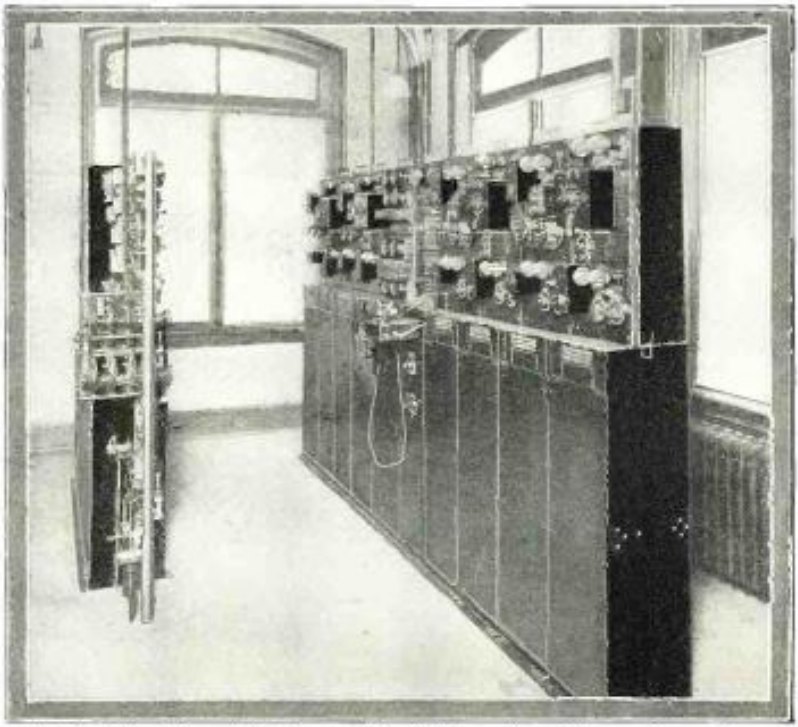
Homo sapiens invariably find romance in mystery; it is one of those psychological manifestations which has remained within from the time in the not-so-remote past when little was known of natural effects.

And what smacks more of the unknown than radio? Music and voices speeding through space at an unbelievable rate, to be caught by wire nets on house-tops and released again through a horn. Yes; it appeals very much to one's imagination. But "wired radio" does not seem at all unusual. We are so used to things operated by electricity, fed to them by wires, that "wired radio" appears too much like the matter-of-fact manner in which water is piped to a house.

Yet, have you known that something quite marvelous takes place in wired radio systems, something far more interesting and unusual than the mere flow of water through a pipe or electric light current through wires? Imagine, if you can, two wires supplying electric light current to your house and at the same time carrying three different musical programs without the slightest mixing or interference of the four currents. Yet all four travel in the same two wires. Let us see just how this is accomplished

What is Wired Radio

"Wired radio" refers to the use of radio frequency currents, just the same as employed in radio broadcasting, in telegraph, telephone, electric light or power lines. The workability of the system depends on the fact that electric currents having dissimilar periods of vibration or frequency do not intermingle or interfere with each other. Consequently it is possible to superimpose a great number of currents of differing frequency on the same set of wires, without the possibility of any difficulties arising from "mixing." This being the line of practicability, we can go a step further and superimpose music or voice vibrations ("modulate") on each distinct radio-frequency current, and let them all go their way along the electric light, telegraph or telephone wires without any cause for worry. It is just as if we collected the transmissions from say



A 1925 Carrier Current Telephone installation with four sending and four receiving panels, one testing panel, and a voice frequency panel - courtesy of Western Electric.

three broadcast stations operating on different wavelengths and bid them go by way of wire instead of spreading out in space.

Wired Radio Broadcasting

Though the use of carrier-current telephony for long-distance communication over light power lines and telephone wires dates back many years, the use of the system for broadcasting entertainment was instituted for the first time but four years ago in and about Washington, D. C., and Cleveland, Olio. In the early part of 1923 experimental operations were transferred to Staten Island, New York, where it was possible to serve some 25,000 people through the feeder lines of a single central power station Though this unique service was discontinued a short time thereafter, it was reported that the public's reaction to the service was considered favorable. The idea, as instituted, called for the rental of special receiving sets which could be plugged directly into any electric light socket. The power company's customers were to be charged from two to four dollars a month and, in turn, they were to be provided with the best of programs from the studios located at the central power station.

Though there has been a great deal of skepticism aired whenever one has been so rash as to suggest that someday wired radio would supplant space radio. The question remains speculative. However, carrier-current telephony and telegraphy is being employed at the present time, on a commercial basis

Artist’s conception of what a “modern Radio Telephone” control room would look like “by 1950” by Thornton Oakley (Norman Rockwell Library)

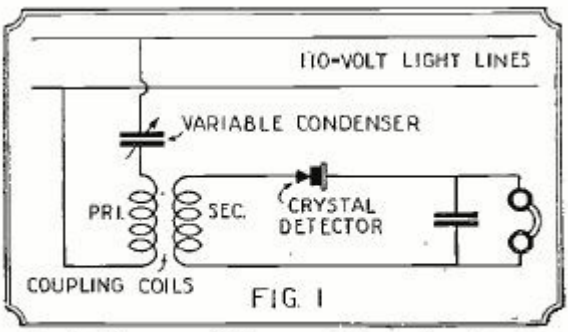
and has met with complete success. It is through this commercial application that the system may, in the future be employed with equal success from all standpoints, to furnish entertainment to the public. When one considers the fact that the nature of carrier current telephony systems is such that they are no more susceptible to interference and distortion than are space radio systems, it can be assumed that it may be favored by the public in the future when the time is more ripe for its introduction.

The Wired Radio Receiver

The developed system heretofore mentioned, which was put into operation on Staten Island, allowed for the simultaneous transmission of three programs over the electric light wires: although only two programs were transmitted when the station was first opened. The receiver provided the subscribers allowed them to select either program at will. It essentially consisted of a cord and plug to attach it to the 110-volt light socket, coupling coils similar in design to present-day tuned-radio-frequency transformers, a variable condenser for selecting the desired program, a crystal detector for rectifying the modulated radio-frequency currents, and a two-stage vacuum-tube audio-frequency-amplifier to provide sufficient energy for actuating the loud-speaker which protruded from the top of the cabinet.

By a novel arrangement, the "A" and "B" current for the two vacuum tubes was supplied directly from the 110-volt line. Thus, the wires were not only acting as the carrier for the programs, but supplying the current for operating the receiver, making the use of batteries unnecessary.

The fundamental wiring arrangement of this set is shown in Fig. 1. It will be noted that the primary coil of the coupling transformer is



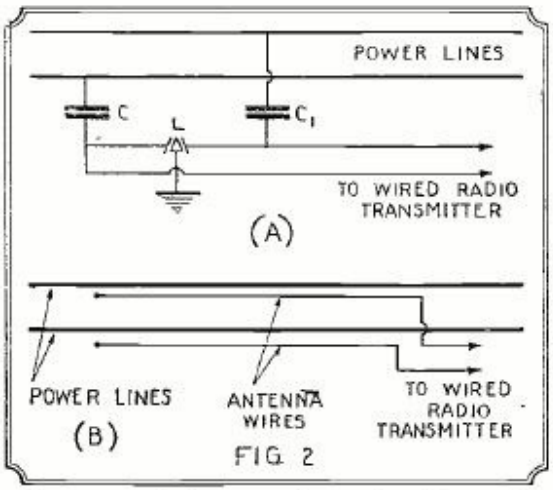
Circuit diagram of the receiving set, showing how it is connected to the light line.

connected directly across the 110 volt line, but with the variable condenser in series with one of the leads. This coil and condenser compose a tuned circuit; and when adjusted to any one of the carrier-current frequencies, will induce a current in the secondary coil of the coupling transformer, whence it passes through the detector-telephone circuit. There is no response in the telephones [headphones] unless the tuned circuit is adjusted or brought into resonance with one of the frequencies being employed for the transmission of the programs.

The wired-radio transmitter employed was similar in most respects to the usual type of space radio broadcast transmitter, and had the power of 500 watts. The output was fed into the 2,300-volt power line through a bank of low-capacity high-voltage condensers. The operating frequencies were in the vicinity of 40,000 cycles (7,500-meter wavelength), the most appropriate frequency to employ in connection with the transmission lines.

Difficulties Encountered

The most difficult problem which has been encountered in the application of carrier-current telephony to power-transmission lines is that of efficiently connecting the carrier-current equipment to the power-line conductors. Two methods have been found satisfactory, in each of which the connecting medium is capacity. In one of these high-voltage coupling condensers are used as the connecting medium, with a protective ground, as shown at A in Fig. 2. In the other arrangement the capacity is obtained by stringing, parallel to the



The two methods commonly employed for coupling carrier-current apparatus to power lines.

power-line conductors, two so-called antennae extending for perhaps 1,500 feet along the transmission line. The carrier equipment is connected to the two antennae and the carrier currents are transferred to the power-line conductors through the medium of the capacity between the antenna wires and the adjacent power-line conductors. This arrangement is shown at B of Fig. 2. A carrier-current telephone coupling panel, wherein high voltage condensers are employed, is shown in the illustration of Fig. 3. The upper part of the panel contains the chokes, the lower part of the panel the two intermediate high-voltage coupling condensers and the protective device.

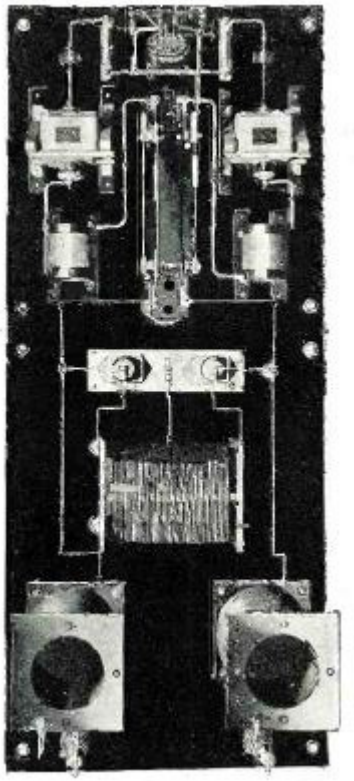


Fig. 3 Coupling and protection panel

Another early difficulty experienced was what has been termed "night effect." It was found that the signal intensity dropped considerably in the night-time; this being due to the short-circuiting effect on the various feed lines as the myriads of electric lights were turned on which naturally altered the resistance of the wires.

Overcoming Variations in the Lines

Coupled with this were losses, due partly to the loss in the transmission conductors themselves and partly, as explained previously, to the shunting loss due to connected power apparatus. To obviate these difficulties, one company has adopted a full metallic circuit, using two of the power-line conductors as the two sides of the telephone circuit, similar to the one shown in Fig. 2. This arrangement is so decidedly superior from every standpoint to the more commonly employed arrangement of a ground return circuit, that it will

undoubtedly become the standard arrangement for all carrier current systems

Open sectionalizing switches introduce a substantial obstacle to carrier transmission over power lines. Another difficulty is offered when there is a change in the voltage of the transmission line. At such a point. the transformer or auto-transformer employed to effect the change acts as a barrier to the carrier-frequency currents. Fortunately, however, by means of a comparatively simple arrangement, known as a "by-pass antenna," the currents can be effectively transferred around such a barrier, although a considerable loss is incurred.

For the purpose of obtaining satisfactory operation under adverse conditions and to combat the effects here-to-fore mentioned, the equipment of one company has been designed to include an emergency power amplifier. Normally the power required for satisfactory transmission on most installations is in the order of one watt. The emergency amplifier increases the power to about fifty watts. A typical carrier-current telephone transmitter and receiver control includes the oscillator tube, which generates the carrier frequency, the modulator tubes and a power amplifier for emergency use. This unit is designed expressly for use in connection with power transmission lines.

Use in Telephone and Telegraph

Telephone and telegraph lines are extensively employed for the transmission of carrier-current telegraph and telephone communications, aside from the regular traffic handled.

The ordinary telegraph employs a range of frequencies extending from 0 to 100 cycles per second. The ordinary telephone requires the range from 200 cycles to 2,000 or more. Commercial equipment in operation at the present time utilizes frequencies between the ordinary telephone range and about 30,000 cycles. Frequencies of ten thousand cycles per second or over are high enough to act as "carriers" of telephone currents. In the use of carriers a very narrow band is all that is required for each telegraph channel; but a broad band is necessary for each telephone channel as the band must in the latter case, be of sufficient width to include the entire band of speech

frequencies. Thus, it is apparent that more channels are provided for the telegraph than for the telephone.

In either case, of course, it is necessary to employ a different frequency for each channel. Thus, an ordinary open-wire line, such as is used for telephonic communication, is used with this equipment to transmit frequencies from about 5,000 to 30,000 cycles per second. This permits multiplex operation by utilizing different portions of this range for separate and independent messages. The same holds true of multiplex telegraphy except that the frequency range employed is considerably lower. In both cases, generators for each of the separate frequencies are connected to the line at the sending station. The currents from them are separated at the receiving station by selective circuits, each of which discriminates against all currents except those of frequencies within a particular narrow range.

A typical commercial carrier current telegraph installation is shown in the illustration on page 6. There is one testing panel and four panels for both sending and receiving, upon each of which are mounted an oscillator, amplifiers, demodulator, selective circuits, and relays, for one duplex carrier-current telegraph channel.

Commercial Value of Carrier Current

It is evident that both carrier-current telegraph and telephone systems have a great commercial value, when it is considered that not only does the system allow the use of telegraph, telephone and power lines for other than their normal functions, but also provides means for handling an enormous amount of traffic, for as many as forty separate telegraph messages can be transmitted over one set of wires. Naturally this spells rapidity, and rapidity is an important factor in the business world where "expedite" is a by-word.

Carrier-current systems have proven of considerable value in connection with power transmission as they provide a fool-proof means of inter-communication between the central power house and the numerous substations where instant contact is of prime importance for giving orders.

Carrier-current telephony will no doubt he employed by all railroads in the future, so that passengers will be in a position to communicate with their homes or places of business. It has already been tried out and proved quite successful. (See Radio News for June, 1926, page 1636. [inserted below]) Antenna Wires were placed on the roofs of the cars, parallel to the railroad telegraph wires which run alongside the tracks. It is apparent that this method of pick-up is identical to that illustrated in the diagram B (Fig. 2, page 9) except that the antenna wires in this particular case are not stationary.

Whether carrier-current telephony will be actively employed for "broadcasting entertainment to "electric-light customers" remains to be seen. That is dependent upon the public, as well as upon the enterprise of the public utilities. Certainly, it would be a convenient arrangement, and might well compete with the phonograph which still holds the upper hand.

Museum Note:

Your editor stumbled across the "***Connections Museum***" of Denver, CO., and Seattle, WA. Both are part of The Telecommunications History Group, Inc. See living history and (when they reopen) some great displays of how the telephone has changed over the last 130 years. These huge warehouse-size buildings have working hardware that demonstrates the evolution of telecommunications since its inception. https://www.telcomhistory.org

Do This First

A tip from Technician Sonny Clutter, Camus, Washington

This first tip is so simple, yet extremely important and in my opinion the most valuable. It's usually not included in most courses in electronics. I learned this very early as an apprentice TV repairman at the age of 15 from Jake Rodman (Supreme Radio & TV service), a first class TV technician in my home town of Ashland, Kentucky.

Always give the piece you are about to service a good visual inspection. Give it serious scrutiny, not just a glance or quick *once over*. Be diligent, give the piece (or pieces) a good cleaning, look between the components, the tuning condenser, remove the tubes, inspect the sockets. Look for cracks in the Bakelite. Look on the underside for sloppy workmanship done by a previous technician or mechanic (this is often the source of many problems). A great deal can be learned by noticing the physical condition of the chassis. For example; a burned resistor, blown-out capacitor, sloppy soldering, a bundle of wires all *globed* together by the previous mechanic who just clipped off & left the leads & wires of previously replaced components. Look for material leaking & oozing from a transformer or canned component. Notice anything that looks out of place. These will give you a place to start.

[You might be able to find a picture of the way the chassis is supposed to look on the internet for comparison. Ed.]

Sonny is known to most as the Radiola guy. His collection is beautiful and his experience and "know-how" is second to none. You can glean a great deal from The Radiolaguy website where years of experience and common sense are on display. His technical tips start here-
https://www.radiolaguy.com/info/SonnysTechTips.htm

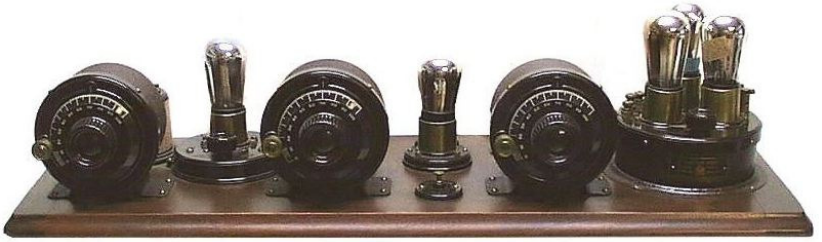
A Brief Review of Atwater Kent

Compiled by Dick Karman

Arthur Atwater Kent Jr. was a tech school dropout. He was enrolled in Worcester Polytechnic Institute three separate times, but each time his grades were not as important to him as his engineering projects. His interest was in automobiles and inventing. In 1919 Atwater Kent already had 25 U.S. patents (he eventually held 93). His first business was the Kent Electric Manufacturing Company, where he designed and sold small automotive electric motors, generators, fans, eventually engineering the Unisparker Ignition systems.

Early high performance automobile engines had a spark coil for each cylinder and the distributor would distribute 6 volts from the battery to the cylinder in the order required. A lever on the steering column would advance the spark as higher RPMs required. Placing the high voltage coil at the distributor and allowing the rotor to distribute the spark down high voltage wires gave the engine advance the means of faster distribution and fewer parts to keep in alignment. The Unisparker, and its successors became the automobile industry standard for almost 50 years, until the electronic ignition systems came along.

At the end of 1920, hearing the news of KDKA, Arthur Atwater Kent Jr. turned his attention to radio. He always had an eye for quality and he would put his name on nothing that did not have “Atwater Kent quality.” He, at first produced radio components, selling to those early enthusiast who were building their own sets. The Atwater Kent components were the ‘Cadillacs’ on the parts market. To that same market he would sell an open board ("breadboard") on which to mount his parts.



Model 10C breadboard

In 1923, the firm was manufacturing complete "open" radio sets, introducing the Model 10 as a Christmas promotion. The Model 10 had all of the refinements that Model 1 through Model 8 had introduced in the last 2 years. It had two RF amplifiers, a detector and two AF amplifiers. Each component was enclosed and mounted on a Mahogany board.

In 1925, the AK Radio Manufacturing became the largest maker of radios in the United States. At its peak in 1929, the company employed over 12,000 workers, and made nearly one million radio sets. By 1931, Atwater Kent had produced more than 3,000,000 radios.

Starting in 1931 Atwater Kent Radio brought out a new cycle of about 15 radios yearly, including consoles, compacts (table models), auto radios, DC sets, and 32 volt farm radios. The quality and craftsmanship of the radio made it quite natural for them to be found in fine furniture like a Conner writing desk, a Pooley combination desk and radio cabinet or a Kiel table. These furniture items are nearly as popular as the Atwater Kent breadboards to collectors today.

Some feel that the 1930s brought the expiration of patents on the superheterodyne circuit, which led directly to the proliferation of inexpensive All American Five radio designs, thus the flooding of the market with cheaper radios; Some report that it was the unionization of radio factory workers who wanted higher wages; but in 1931 corporate documents show that Atwater Kent Manufacturing had disbanded the engineering and design section and was preparing to wind down the manufacturing operation in the 1930s anyway. In the words of some of his closest friends Arthur was not going to compromise quality for price, and he wasn't going to promote gadgets and glitter where sound engineering and manufacturing should have been enough to sell the product. The depression made it hard for the public to afford an Atwater Kent Radio. Mr. Atwater Kent Jr. closed the plants, took his millions and retired to California in 1936.

Museum Note:
The **Atwater Kent Museum** on 7th street in Philadelphia, (purchased by Atwater Kent and donated to the city in 1938) is no longer known by that name. It is now the Philadelphia Historical Museum and is curated by Drexel University.

High - heeled Shoes

Fiction by the late Ruth Amos, Lebanon, Missouri

A head full of curls and her favorite pair of red goin'-to-town high heels still left Aunt Berta a hair short of 5 feet tall, but to the five dozen or so residents of our Ozark town, she was as big a character as they came. Even as she aged, with her flaming hair fading and her beloved red heels forsaken for a pair of frumpy black oxfords, her raucous laugh, quick wit and gift of gab kept her a fixture of the community.

When her husband died, folks worried about her living alone in the boondocks. Aunt Berta just laughed and said she was never alone with her old crank telephone and the party line. When your phone rang, everyone's phones rang, and a combination of long short rings identified the party being called. But none of that mattered to Aunt Berta. When she heard the phone, she'd pick up, listen and join in. Nobody minded; it was just how she kept in touch.

Then, in the summer of 1959, the phone company put in dial telephones. People still shared party lines, but now only one phone rang when a call came through. Aunt Berta was devastated. She could still eavesdrop, technically, but she'd never know when to do it. Almost overnight, Aunt Berta changed. Without the constant contact the old crank phone provided, she felt isolated. We all called her often and told her to call us anytime, but she just replied sadly that she knew we meant well, but it wasn't the same as being part of the community.

Well, a few weeks went by, and suddenly Aunt Berta was back to her chipper old self. No one could figure it out for days, and then we caught her picking up on our phone calls again. Somehow, even though her phone didn't ring, she knew just when a call was coming through.

After many mysterious looks and smug smiles, Aunt Berta finally confessed her secret. It seems that one day, just as she reached for the phone, the receiver vibrated. She picked it up and heard her neighbor say hello. Bingo! She knew! So she fetched one of her old favorite red heels. With the toe balanced on the receiver and the heel teetering on the edge of the counter, the vibration from an incoming call would send the shoe clattering to the floor. Better yet, she could hear it from any room in the house. So once again, Aunt Berta and her red shoes were the talk of the town, and everyone had a good laugh to boot.

This is a story about technology of years gone by, but not necessarily radio. Even though slightly off topic, I thought we all might enjoy the reminder of times past. Ruth Amos passed away in 2016 and left behind a legacy of good memories.

The other side of the Mic

By Dick Karman

A memorable chapter in old radio broadcasting should be labeled "*I Love Carleton E Morse*." Morse, a journalist who was born near the turn of the last century, was probably best known for his two most popular radio shows "***One Man's Family***," and "***I Love A Mystery***." The former, in a soap-opera format that was on the air continuously for 27 years.

Morse, for reasons known only to a few, captured one audience with two-fisted, hard-boiled detective action in the broadcasts of ***I Love A Mystery***, ***I Love Adventure***, and ***Adventures by Morse***, while he attracted a more gentle and nostalgic demographic with ***One Man's Family*** which was "dedicated to the mothers and fathers of the younger generation and to their bewildering offspring." Many have only read about (but seldom heard) his other creations like ***Chinatown Tales***, ***Musical Miniatures***, ***Illustrated Tales***, ***Split Second Tales***, ***House of Myths***, ***His Honor the Barber***, and ***The Family Skeleton.*** As can be expected these were less popular.

Those of us who collect recordings also have copies of audition discs of shows like the ***Upper Room*** where Morse's scripts bordered on biblical advice to parents.

For **Bald Letter** readers who might like to enjoy Carleton E. Morse and keep some of his shows to play on your radios, **Reliving Radio** has placed the complete 52 episode run of ***Adventures by Morse*** on the web site for your enjoyment.

This series was sold in syndication and thus is complete and predicable. Each "pair of adventures" is wrapped up in 13 weeks (episodes). You will see the pattern.

Visit www.Relivingradio.com/students

To listen, streaming works, but to have it for your use, download is preferable so that the limited ports on my server stay open for others to enjoy. (Thanks)

That's it from the other side of the mic.

The Readers Write

These are few of the notes that you've sent to me. I appreciate them very much. Thanks for your kindness.

The graphics of your e-mail magazine are superb. –
A.R. Portland, OR

I just wanted to compliment you on the fine publication you've been supplying, it really is a fun and informative read! Really appreciate your efforts, well done! –
C.B. Virginia

Thanks for letting CHRS publish your "letter" in Steve's newsletter. It gets a good audience. Good material and a good look. –
M.A. California

I saw this cartoon and thought of your readers –
D.A.K. Portland