

By Kevin Poulter

Atwater Kent Radios – quality with mass market appeal

Back in the June 2011 issue, we told the story of the Wells Gardner radio factory in the United States during the 1920s. This month we have the Atwater Kent story. Atwater Kent was a legendary brand of radios in the 1920s and they were sold in very large numbers in America and also in Australia.

The Atwater Kent Model 20 is an early "big box" receiver, circa 1924.

A CITHUR ATWATER KENT was born in 1873 and his career choice was probably influenced by his father being a machinist, before he became a doctor. Atwater, as he became known, studied mechanical engineering at Worcester Polytechnic. Institute in 1895. Not keen on study, Atwater was already running a small business called the Kent Electric Manufacturing Company in the back room of his father's machine shop.

Kent was making and solling electrical items like small motors, generators and fans. By 1906, this included automobile ignitions, with the Uni-Sparker ignition system becoming an industry standard. In 1921, Atwater Kent improved his ignition system further and patented it.

Entertainment radio was saturating

the media hype of the early 20s, so in 1921, Kent produced his first radio components, with do-it-yourself kits for "breadboard" assembly by early radio enthusiasts. The Model 3925 (or Model 1) was introduced late in 1922, as a tuner, detector, and onestage amplifier without the middle variometer installed, in order to avoid Edwin Armstrong's regenerative circuit patent fees.

The variometer was sold separately (frequently being featured in the same advertisement as the radio, although its real function was not mentioned). When this "missing" component was installed by the user, it provided additional RF signal boost through regeneration.

During 1923, his firm produced complete radio sets, with the Model



The Atwater Kent Model E speaker (circa 1928) had a timber-veneer cone.

The 1926 Model 32 used seven valves and was one of Atwater Kent's first models with single-knob tuning.



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Released in July 1928, the Model 40 was Atwater Kent's second AC receiver and sold for \$US77.



onsolette, circa 1929. This is the model shown in the photo of the press stamping out cabinets and is often referred to as the "stove model", for obvious reasons.



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This Atwater Kent 20C chassis in a Pooley cabinet is from 1926 and is battery-powered. The batteries were housed in the cupboards below the radio. Note the station log on the right.

This beautiful piece of furniture discreetly houses Atwater Kent's 1929 Model 55C chassis in a Kiel table cabinet (Kiel was one of the furniture factories used by Atwater Kent). The loudspeaker is downward-facing and the mains cord, antenna and earth lead are hidden by running them down inside the rear legs (mains cord on one side, aerial and earth on the other).



This semi-automatic machine was used for making glass-encased grid-leak resistors.



Atwater Kent made their own transformers. Here they are being wound on a former which will later be cut into four coils to be assembled with mild steel laminations.



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Inside the Atwater



Here an industrial grade electric drill is being used to mount hardware on the chassis. The vertical action is via chain-drive from a foot-pedal.



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Testing wire-wound potentiometers. Atwater Kent made these too, including most likely the Bakelite knobs.





Here the operator is adding speaker cloth to a circular frame.



Radio manufacturing involved heavy engineering as demonstrated by this large press for stamping Model 53 radio cabinets. The operator in the foreground is buffing a finished cabinet. The hole on the right top was for the volume control and the speaker cloth was covered with a cane grille in some models or woven metal wires painted gold. The 53 had seven holes in the rear to allow for better sound, with a chassis the same as Atvater Kent's Model 43.

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Making a variable capacitor and coil assembly. All the individual parts would have been manufactured in the same factory.



This department was devoted to coil assembly. Some of these coils appear to be intended for use in power and audio transformers.

10 ready for Christmas that year. This was followed by the Model 9 and more breadboard sets. According to an employee, Mr Kent had already decided to close his plant in 1923 and was winding down his operations. However the increasing sales of radios apparently changed his mind and he expanded instead.

In 1924, the company moved to a new \$2 million plant in North Philadelphia. This plant, constructed in sections, would eventually cover 32 acres (13 hectares). The Atwater Kent brand became known as a leader in quality radios and despite high prices, people recognised they were one of the very best money could buy. He spent a staggering half million dollars on advertising alone during 1924.

By 1925, Atwater Kent was the largest manufacturer of radios in the USA. The company also sponsored the popular "Atwater Kent Hour", a top-rated radio concert music program broadcast across the country from



Atwater Kent in the test department. The radios appear to be Model 20C's, the most popular model Atwater Kent made, with about 250,000 units produced from 1925-1927. Note the battery banks on the floor.

1926-1934. Sponsoring this show cost \$7000 a week in 1926-7 and his printed advertising outlay was three to four million dollars!

Single dial tuning

Atwater Kent saw that single dial tuning would be a very popular upgrade to the Model 20. Linking the second and third runing dials by beltdrive worked but not so linking in the first stage. Then John Miller (theo lalso discovered the "Miller effect") added a valve between the antenna and the first tuned circuit, thereby isolating this circuit and making it tune in unison with the others. And so, with a few other modifications, the 20 chassis became the Model 30 with single-knob tuning.

Business was booming but not without forks in the road. In 1925, 17,584 Model 21s were produced but 7208 were returned in 1926. Still, within four years. Atwater Kent had sold one million radios to American homes and began exporting to countries like Australia.

The Australian connection

In 1927, Healing Australia was



TWATER KENT



This is the capacitor winding department. These capacitors use paper as the dielectric and tin foil for the electrodes. They are wound on a circular mandrel, then flattened, terminated with wires and installed in tin cans whereupon they would have been impregnated with wax or petroleum jelly in a heated vacuum chamber.



Atwater Kent in the machine room. This department would have been involved in making all the tools and dies used in the radio factory. The two units in the foreground are milling machines while the one behind Atwater Kent is a shaper. Notice that all the machines are belt-driven from overhead horizontal shafts.

components extensively in their early Healing-branded sets.

Mains-powered sets

On December 24, 1927, Atwater Kent's first purpose-built AC set, the Model 37, went on sale for 588. Its performance approached that of its main competitor, RCA's Model 17. However, at nearly half the size and against the RCA set's \$130 price, it made a big impact on the market.

At its peak in 1929, the company

employed over 12,000 workers producing nearly one million radio sets a year. As seen in the accompanying photographs, the plant was a model of quality radio production and received hundreds of visitors a year.

Two days after the financial crash in 1929, Atwater Kent issued a statement: "The Atwater Kent Manufacturing Co. has never had any shares of its stock on the market. It owns outright its business and its manufacturing plant. It has been in business for more than

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Atwater Kent's 1934 advertisement for the powerful models few could afford. Note the two single plate 2A3 pushpull audio valves in the top left of the chassis, highly coveted by the audio fraternity.

importing Atwater Kent radios and there is little doubt this established Healing in the Australian markat. They sold them by the thousands, especially the models 20C and 35, plus the model L horn speaker, right up until tariff barriers were put in place by the Scullin government in late 1929. Seven then, Healing used Atwater Kent

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This is another metal stamping press which is belt-driven from an overhead electric motor. The large flywheel is used to store energy and this is released in each stamping operation. These days such presses would be hydraulic.



This operator is soldering flying leads to coils, using a much bigger iron than we would use today.



An Australian advertisement in July 1927, placed by A.G. Healing, distributors of Atwater Kent radios.



In June 1928, E.T. Muir of Melbourne announced they were the sole metropolitan outlet for Atwater Kent radios and speakers. The phrase "chosen by more than a Million" actually referred to sales in the US.

twenty-seven increasingly profitable years, has always done business on its own capital and has never borrowed a dollar. All its resources and experience are concentrated upon just one thing – the making and selling of fine radio instruments.

Production in its thirty-two acre factory is scientifically controlled, so that Atwater Kent dealers always have enough radios on hand to meet the public demand and are never



Atwater Kent manufactured ignition systems for many years before moving into radio production.

overstocked. Its inventory is never excessive. Single-minded devotion to its one job - the production of the finest radios that can be built – has put the Atwater Kent Manufacturing Company today in the strongest position it has ever held."

Atwater Kent made good market predictions over the years and met the upcoming trends. However, he then thought that consumers wanted more consoles and invested accordingly. This was proven wrong, as people now looked for economy sets. During 1930, superheterodynes were included in heir range of about 15 radio models each year. These included consoles, table models, carradios, direct current (CC) sets, battery sets, and radios using 32V power for farm and rural areas where mains power was not available.

By 1931, the company boasted it had produced over three million radios. However, the depression was not a good climate to sell quality radios, so



Did people really dress formally to listen to the radio? We think not but such an elaborate "wireless" as depicted here could only be afforded by the very rich.

Atwater Kent closed his engineering department.

To meet the lower price expectations, the plant built table-top radio sets but Atwater Kent still made little compromise on quality. In addition, patents for Edwin Armstrong's superheterodyne circuit expired, so there was soon a deluge of inexpensive "All American Five" radio sets.

As a consequence, Atwater Kent shut down his radio factory in 1936. The plant was purchased by a major local competitor, Philco, who had branched out into air-conditioners and refrigerators.

Prized by collectors

As Atwater Kent radios were high quality, many have been restored by Australian and American collectors today. Cabinets were made by the Red Lion, Kiel and Pooley furniture companies, with the best consoles being the finest furniture. One radio was sold inside a grandfather clock.

Atwater Kent enjoyed the lifestyle of a wealthy man, with a vacation home on Mt Desert Island, Maine. The house was known for its marble staircase, vaulted ceilings, a foyer that opened onto the ocean and superb gardens. "Sonogee" was owned by the Vanderbilts before Mr Kent acquired it. He also had a house at Kennebunkport, Maine, which he named "At Water's Edge", also once owned by the Vanderbilts. Mr Kent's Philadelphia home was his "West Hills" estate.

He "retired" briefly to Florida, running a real estate business, then in 1941 moved to Bel Air, California, where he purchased a 32-room mansion named Capo di Monte. Located atop the highest hill in Los Angeles. His estate was well-known as a venue for lavish parties, attended by numerous Hollywood personalities. He lived there until his death in 1949. Leaving more than \$9 million to family, friends, servants and institutions.

Credits

 The Library of Congress (USA);
All photographs restored by Kevin Poulter;

(3) Thanks to HRSA members Mike Osborne and Richard Begbie.

Recommended reading

Alan Douglas' Radio Manufacturers of the 1920s, Volume 1. Considerable technical information, including circuits, can be found on the web. SC