

Automobile Radios – The Early Years - Part 1

by Scott Phillips, Sr

In the mid twenties, radio manufacturers did considerable advertising in the automobile magazines like Motor and Automotive Merchandising. It was felt that this was a natural arrangement since the radio business seemed to be developing along the same lines as that of the automobile, and the fact that the heavy season for selling radios was generally the slower time for automobiles. Radio was destined to become one of the greatest industries in America for exactly the same reason that the automotive industry was. Both the automobile and radio erased distance and were bringing rapid changes to the way people communicated with each other. The automobile made it possible for people who lived in cities to travel the highways and the back roads of the country. Radio made it possible for people who lived in isolated farms and villages all over the United States to tune in the great cities and listen to world-famous artists, orchestras, statesmen, and musicians.

This encouraged courtship between the automobile and the radio is very interesting, since some radio makers, (Operadio, Deforest, Marconi, Trav-ler and RCA, to name a few), offered unique portable receivers during this time frame. With self-contained dry cells (batteries) and large, bulky built-in loop antennas, it wouldn't have taken too much imagination to rig one of these sets for use in a vehicle.

Although not intended for the purpose, Atwater Kent Models 30, 32, 35 and 48 battery radios were perfect examples of a compact metal case having a single tuning dial and making an ideal radio for a permanent installation in a vehicle. With these radios, it was necessary to make provisions for the "B" batteries (a group of several dry cells ganged together to achieve 67 ½ volts); the "A" lead cable for the tube filaments would have been connected to the car's 6 volt battery. The metal housing of the car became the "ground" and a connection made from the radio to a long antenna attached around the roof of the vehicle.

There were a number of other examples in the mid twenties of vehicle radio installations. One involves Alfred H Grebe and his Richmond Hill New York facility. Alfred Grebe had not only been one of the first suppliers of radio receivers, but had also operated his own radio station on the premises. WAHG featured the royalty of stage, screen and radio stars on special appearances and, even more surprising, was his continuing interest in automobile radio equipment. One car was maintained as a mobile broadcasting station for relaying special events such as the horse races at Belmont Park or perhaps the boat races on the Hudson River.

Another car radio was installed in a Buick which called for the performing artists and took them back to the hotel after their appearances before the microphone; the car was appropriately named the "Synchrophase Buick."

Another exciting article appeared in the December 1925 issue of the National Radio News, published for the students and graduates of the National Radio Institute. A graduate of N.R.I. was chosen to take a "Driverless Auto" on a Round-the World-Tour. This radio-equipped Chalmers-Detroit motor car was designed to start, stop, turn, and shift gears by radio impulses from a moving vehicle following behind. This demonstrated the transmission of radiotelegraph signals from a short distance and having many different applications applied from moving sources (vehicles). This was previously proved to be possible with the Marconi experimental transmissions on November 25, 1913 between the cities of Scranton, PA and Binghamton, NY.

A moving railroad train traveling 60 miles an hour received a transmitted telegraphy message while moving away from the source of the transmission. Marconi wished to try and expand the use of the "radio", the term that had been coined in 1912 since wireless transmissions "radiated" in all directions.

The value of radio was further stated in a report from the skipper of the airship Shenandoah, Lieutenant Commander Zachary Lansdowne- U.S. Navy. A statement to the effect that communications is no longer dependent upon transportation and referenced a lighter-than-air ship that he commanded with the margin of safety provided by the on-board communications radio equipment. There was no doubt that radio was popular with the Navy. Commander Roger's Pacific flying boat was equipped with complete radio receiving and transmitting gear, and while on the Naval Base he used his motorcycle equipped radio receiver mounted in his side car.

In the spring of 1926 radio station WJZ with transmitter in Bound Brook, New Jersey, and studios in New York City, went on super-power. The transmitter power was increased from 1000 to 50,000 watts. Others would follow suit as permission was granted. The radio fan, with the misfortune to live near one of these powerful stations, was hopelessly lost as the strong signals blanked everything else out. However, for the average listeners, it meant clear, interference free reception and insured a future for the automobile radio.

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Encouraged by the higher power stations and with improved network programs, 1926 became a big year for the automobile radio. In mid September, a patent was filed by William M. Heina for a portable radio that could be adapted to an automobile. His claims dealt primarily with the location of a radio chassis in combination with the dashboard. The patent drawings pictured an orderly installation which served as a guide for most all future auto radios. According to several sources, Heina installed his radio, known as the Heinaphone, in the New York City area. This radio was a four stage, tuned radio frequency (TRF) amplifier and had two stages of audio amplification, using the conventional UX201A and UX112 battery set triodes. The "A" and "B" batteries were installed in a weatherproof container under the floor of the vehicle. The antenna was either a screen in the roof or an endless wire zig zagged back and forth across the top of the car between the composition roof and the cloth headlining. The radio itself, mounted directly behind the instrument panel with holes cut out for the two tuning dials and control knobs. To An abbreviated magnetic horn speaker was mounted on the headliner, just above the windshield. This was an extensive installation and consumed on the average, a half a week to complete. Ignition interference, however still was a major problem and was best not to use the radio with the engine running!

Mr Heina was not the only one in the auto radio business. Reports that both Radio Auto Distributors and All American Mohawk offered automobile radios in 1926. Little is known about these small companies to this day! During this time the home radio was also receiving its share of attention. With all the battery eliminators and paraphernalia, it was possible to have a set that was operable from 110 volt alternating current readily available from the lamp socket. Tubes with a filament or heater that would operate from the "AC" line were badly needed and would make the "A" battery eliminator totally unnecessary. Frederick S. McCullough, who had worked for Westinghouse, devised his own tube in 1925 with arrangements with the Kellogg Switchboard and Supply Co. to manufacture these newly developed tubes. Sparton Radio Company was one of a few manufacturers that adapted their sets to accommodate the McCullough tubes thus adding an "A" and "B" power supply to produce an AC set! Since Sparton Radio owned a tube plant they soon decided to build their own version of the heater type tube. Thus Sparton became one of the first to offer the "all Electric" set; and also claimed to be the first; in their advertising!

1927 was a vintage year; with Charles A. Lindbergh flying 3600 miles, non-stop, from Roosevelt Field, Long Island, New York, to Le Bourget airfield in Paris, France. Reports of his historic flight were broadcast on coast-to-coast radio networks. Also in 1927, the NBC-Blue Radio Network began

operation with WJZ their lead station, as an adjunct to the NBC-Red Radio Network (the original network of which WEAJ was the lead). American Telephone and Telegraph (AT&T) originally devised the "system" to keep all the stations with the correct broadcast feed. By using a system of push pins on a huge wall map, colored yarn was strung from one "push pin" to another "push pin" with each push pin representing a station, thus each "station" to "station" was mapped out with these colored lines. A code was assigned to each network. NBC-Red, NBC-Blue, CBS-Purple, Mutual-Bronze, and NBC-Orange(west coast) are examples of over 10 colors that were used. NBC-Blue later became the ABC network in 1943 under pressure from the anti trust division of the Justice Department and the FCC.

In the last few years of the decade, RCA added considerably to their tube line with the UX226 AC filament tube and the UY227 AC heater, detector tube. The famous Radiola 17, the first compact self-contained AC line cord set was introduced by RCA. The AC powered sets began to make the earlier battery sets obsolete, where 110 volt 60 cycle electrical power was available. This was another boost for the radio set business as there were thousands of consumers who had been waiting for these radios to be made available. No more "B" batteries to buy, no more storage batteries to keep charged.

In October of 1927 another tube was introduced by RCA, one that would influence the pioneering efforts of the auto radio. Engineered by General Electric and produced at the Nela Park facilities for RCA, the type UX222 was a four element screen grid tube for D.C. filament operation. The inclusion of this screen grid greatly increased the usable amplification factor of the three electrode tube. A three element tube such as the UX201A had an amplification factor of 8, the new UX222 had a maximum amplification factor to 270.

Introduced in early 1929, the new UX224 screen grid tube had an amplification factor in excess of 400. This meant an incredible increase in radio amplification sensitivity. Within a two year time frame, the amplification factor went from 8 to 400 and the auto radio developers were now ready to produce the concept of a totally usable vehicle radio with a high gain amplifier and superb audio.

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