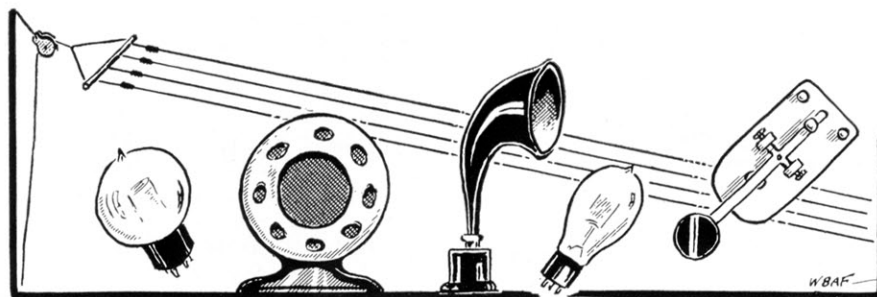


Glancing Back . . .

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In the late twenties the name Western Electric appeared on several radio transmitters that were capable of conversion to police service, but the fixed frequency police mobile receiver just did not appear to exist as a commercial product.

After the stories of successful police radio operation in Detroit were given wide publicity in 1928 and 1929 many police departments sought information by mail or through a visit to Detroit by a representative of their department.

Here in Rochester, the Chief of Police was a young, energetic red-headed Irishman named Andy Kavavaugh who had climbed from the ranks to this top post in the department. Though he knew little about the technical details of police radio, he did know how to accomplish the things he wanted. (He was probably considered an eager beaver by some of the more lethargic members of his force.)

The Stromberg-Carlson Company of this city had manufactured telephones for many years and for a few years had built and sold radio broadcast receivers. When the proposal was made to build and install a police radio system they showed an immediate interest.

With the cooperation of this organization the Chief was able to persuade the City Council to appropriate \$18,000 in September 1930 to cover the cost of a radio system to consist of a station transmitter and twenty-two mobile receivers. The S-C Company took immediate steps to design a mobile receiver suitable to receive police signals in a moving vehicle. William J. Connell, a city detective, was sent to Detroit to make a study of the operation of the new police radio system in that city.

A Western Electric 9A transmitter with a 2A rectifier was installed in a specially prepared room on the third floor of the old number six precinct station. This outfit was originally designed for airport service and had an output of 400 watts. It used two 205D tubes as oscillator and doubler with a

261A tube as amplifier. This stage was modulated by three 276A tubes. A final radio amplifier contained a large glass bottle known as a 251A and selling at \$340 each.

The oscillator was crystal controlled with a heater and thermostat that stuck at very frequent intervals. This required close observation by the radio operator who had a stick handy at all times to tap it with and start the thermostat operating again. The rectifier unit used seven 249A tubes and required a 230 volt, three phase power supply.

Shortly after the Rochester installation, similar transmitters were installed in Pittsburgh, Syracuse and Binghamton, N. Y. These units remained in service for many years in most of the cities but the success of frequency or phase modulation finally brought most of them to a well earned retirement.

Unlike the present day installations where a two-way VHF station is often carried into a room, placed on a desk, an antenna attached and the cord plugged into the nearest electric outlet, the work of installing these early transmitters was a real task involving the connecting and grounding of all pipes, conduits and large metal objects in the building to secure a satisfactory ground system to balance the long T type antenna strung between two one-hundred foot steel towers.

By April 1931 the transmitter was ready for testing and the first unit of the newly designed receiver was ready for field tests. It was known as S.C.-D2175 receiver and there was a striking similarity in outward appearance to many of the present day two-way units. Most other early police receivers were converted broadcast receivers and were mounted under the dash of the car. This receiver was mounted on a heavy chassis with a front panel containing two multiple connectors and slid into a solid steel case very similar to many present day units.

The receiver was powered from the six volt car battery and three large B batteries which usually gave about three to four weeks service. The tube line-up consisted of a 236 tube as first detector, a 237 as oscillator and two stages of IF using 236 tubes. A 236 acted as auto-

matic volume control with another 236 as second detector. A 238 provided the final audio output.

The biggest problem with these receivers was the lack of frequency stability. Use was made of small mica dielectric variable capacitors which resulted in considerable change in frequency with every change of humidity and temperature. This condition was corrected and a B eliminator provided in a later and more compact model known as No. 31. This model also contained a squelch circuit and was more quiet. It was a good receiver for the time, but it was not a commercial success and the S-C Company retired from the police radio field in favor of other products.

Mobile antennas were a real problem and it was not until 1937, when touring in New England, that I saw the first whip antennas being used. In the early mobile installations in this city it was necessary to remove the upholstery inside the tops of the model A Fords. The outer canvas top was supported by a layer of ordinary chicken wire which was grounded to the car on all outer edges. About three inches of this wire was cut away around the entire perimeter and replaced with heavy twine. An ordinary wire lead was attached to the screen and run to the receiver. The upholstery was then replaced in the top of the car. This operation alone took more time than making several complete installations of present day equipment.

Then there was ignition noise. With no squelch or noise suppression circuits in the receivers, it was just impossible to suppress all ignition and electrical interference in any of the cars. It sometimes took several days to reduce it to a point where signals could be understood when the car was at any great distance from the station.

By early June all twenty-two cars were installed and on June 8, 1931 at 8:00 p.m., station WPDR was ready for service. At eight-twelve the first radio call in New York State outside of Buffalo was transmitted to car 32 by this writer. For the first month the service was available only from 8:00 p.m. to 4:00 a.m. The remainder of the day was required