

RADIO-CRAFT

'' RADIO'S GREATEST MAGAZINE ''

RADIO IN 1950

By the Editor — HUGO GERNSBACH

WAY back in 1925 in the writer's former publication *Radio News*, for May, 1925, under the caption, "Radio in 1935," a number of prophesies were made by him. Remember, that in 1925 the radio set as we know it today had not appeared. The most ambitious thing of the times were table models with anywhere from 4 to 10 controls. In order to tune such a set you had to be almost an engineer, or at least a technical radio fan. Our radio sets had no loudspeakers built into them, but we were using separate speakers. The sets were still operated by batteries at that time. The modern set which plugs into the house-lighting current supply was still in the future.

A few selections at random from the aforementioned article appearing in 1925, therefore make interesting reading today in retrospect.

"Suppose one of our popular broadcast stations were to suddenly drop to 25 meters. No broadcast receiver made today could receive at such a low wavelength, because modern receivers are made to operate on a wavelength between 200 and 600 meters or thereabouts.

"The writer makes the prediction that within the next 10 years the popular broadcast receivers will be those which will be able to tune down lower and lower." . . .

"At the same time the sensitivity of our sets will keep on increasing as it has during the past 10 years." . . .

"While the writer believes in the present cycle of super power, he does not believe that it will prevail in 1935." . . . (It is interesting to note that in 1938 the Federal Communications Commission refused to license a number of stations for super power.)

"In 1935 we shall have radio television. It will be possible to see as well as to hear by radio." . . .

"What tubes shall we use in 1935? At the present time all tubes are run by batteries. . . . Within the next few years we shall have a 110-volt tube which will operate directly from the electric lighting mains, without any resistances whatever. This will be a great step forward, but to the writer's mind this is not the final solution." . . .

"The control of the radio receiving outfit of 1935 will be simplicity itself. We are getting away from too many controls, knobs and other handles, which long before 1935 will be obsolete." . . .

"The loud-speaker of 1935 will not have a diaphragm at all . . . you may rest assured that in 1935 you will not be able to tell the difference between the singer's voice when singing over the radio and actually hearing her on the stage." . . .

"It is altogether probable that in 1935 the saturation point of radio will have been approached. By that time anywhere from 25 to 35 million radio receiving outfits will be in operation in the United States." . . . (In 1925 there were about 2 million radios in the U.S. In 1939 there were over 35 million sets in the U.S.)

"Rather than decreasing, the number of radio broadcast stations will probably keep on increasing during the next few years. At that time we shall also have moving broadcast stations, as, for instance, stations on board ships, stations on board airships and airplanes, for commercial and semi-commercial purposes.

"Every rich man's automobile will have its radio transmission and receiving station to enable him to keep in direct touch with his office." . . . (Such automobiles came into use only in the late '30's, as for instance, police cars and Mayor LaGuardia's elaborate 2-way automobile transmitter and receiver.)

In 1925 all of the above predictions sounded wild and many people thought that the writer overstepped the bounds of probability. The fact remains that most of the predictions were realized long before 1935.

What about radio in 1950, 10 years hence? Basing the present upon the past, the writer believes that by 1950 the following radio improvements will surely have come about.

Television now seemingly an accomplished fact is held back mostly on account of the high cost of the present receivers. By 1950, we will have radio receivers incorporating television which will sell at popular prices down to \$25 and less, for the complete set which includes sound and television as well. The present television receiver will bear no resemblance to those of 1950. The future receiver will be most compact and indeed radio-television sets similar to our present midget radio sets will have been evolved. *The television set of 1950 will throw an image on the ceiling or the opposite wall of the room with such brilliance and*

power that you will be able to see the program even in broad daylight, a thing which you can not do today.

The idea of viewing the image at the end of a cathode-ray tube to my way of thinking is all wrong. It will not prevail in the future. Special screens for wall and ceiling purposes will be built, which by electronic bombardment will light up brilliantly so that the eye does not have to be strained when viewing the most elaborate presentation.

Commercial sponsorship in television will be an accomplished fact in 1950 and the advertising, I am sure, will not be as blatant as it is today. Aided by sight the sales points will be driven home more by suggestion than by raw, unvarnished sales talk, which, unfortunately, we have to put up with today. An entirely new sales technique will be developed in the form of *propaganda* rather than direct sales assault upon our reluctant senses. Instead of irritating the listener and viewer, the latter's temper will not be ruffled and he will take the "show" for granted and with good grace, and incidentally the sponsors' sales will improve in direct ratio.

The next decade will be one triumphant in static-less and noise-less radio. Thanks to Major Armstrong's invention of *wide-band Frequency Modulation* the entire radio industry will be revolutionized so much that, by 1950, when we listen to a 1940 radio set it will arouse our incredible laughter.

It is interesting here to note how the tinny and blarey loud-speaker of 1925 has made way for the softer-sounding radio which we are accustomed to today; but as the years roll by our jangled nerves, already saturated with noise, will demand still less volume and still softer, quieter radio sets will be the order of the day. But we will not stop there because even a medium-loud radio set if softened down by all the requirements of available technique, will still disturb people in the same house or in the same apartment. For this reason I believe that the *personalized* radio set will be preferred by many in 1950. People will wish to listen to their radio sets and enjoy the television program without annoying or disturbing people in the same room or adjoining room. The solution of the problem is to equip the future radio receivers with a 2-way switch so the sound will issue as usual if wanted. Then if necessary, the set can be silenced for everyone in the room, apartment or house by turning the switch. A simple attachment that plugs into the set can be strapped to your wrist, with the astonishing result that *you and you alone* will hear all of the sounds, without disturbing anyone 3 feet from you.

In 1926 when I invented the instrument known as the "Osophone" (the forerunner of all present-day bone-conduction hearing-aids) I noticed that it was possible for the osophone when pressing it against *any* bone of the human body, to transmit sounds clearly to the auditory system. It was interesting to note that while a loud volume could thus be transmitted to the ear a person standing alongside of you could hardly hear anything at all. Therefore, by attaching a powerful resonator to the wrist you will be enabled to hear your favorite program in a personalized manner not possible today. Incidentally, the vibration thus imparted to the bone structure gives a delightful sensation, similar to mechanical vibrators which have been in vogue for many years. The personalized wrist-listening device will be a great boon to hospitals, where patients can listen to radio programs to their heart's content without disturbing others who wish quiet.

Our present, highly complex radio sets will probably be simple, from the manufacturing and servicing point of view, by 1950. The trend of future sets is toward less and less tubes. Ten years ago the average set had 8 tubes. Today the average set has probably 5. By 1950 the average set will probably have not more than 3 multiple-duty tubes. This not only cuts the cost of production greatly but makes the receiver less complex and easier to service, while the greater sensitivity and power of the tubes will give even better results in point of output, selectivity and sensitivity than our present 5- and 8-tube receivers. The trend toward simplification of all radio components will continue during the next 10 years. Simplification and ease of replacement will have made tremendous progress by 1950.

How many receivers will we have by 1950? Probably between 50 and 55 million. This figure is conservative as it also includes mobile sets such as automobile radios, pocket radios, portable radios, etc.