



"Takes the Resistance Out of Radio"

REVOLUTIONARY RADIO INVENTIONS

An Editorial by HUGO GERNSBACK

THE fable still seems to prevail, in many minds, that revolutionary radio inventions, which will at once junk present-day radio sets, are always just around the corner.

Particularly in the lay mind, the idea persists that the ideal radio set is about to be invented; that something revolutionary is just about to be sprung on the public, and that it will be best not to buy a set this season, but wait until next year. These ideas are on a par with automobile developments where people at the beginning of a season refuse to buy cars, because they think something new and revolutionary will come about next year; only to see such ideas prove without foundation.

Evolution does not work in this manner. The radio set, in its gradual evolution, is not different from an automobile or a mousetrap. Once an art has reached a certain level, it is most unlikely that everything that has gone before will be swept overboard, in favor of some revolutionary new idea. Of course, this is not impossible; nothing is impossible, but most of the ideas along these lines are highly improbable.

The reason for these remarks is that, every so often, I am in receipt of letters, not only from laymen—but from radio people who should know better—asking whether there is any truth in a "tubeless radio set" which has been featured in the newspapers. The tubeless radio set is one of those myths which has been paraded before us ever since 1920, and is difficult to down. Every once in a while, some young budding genius "invents" such a tubeless radio set and creates no little stir in his own community. Photographs of the set are shown; interviews are given; prominent local business people give their opinions; would-be scientists and radio engineers are quoted—but, invariably, thus far the thing peters out. There have been reported a number of such "phantom" tubeless sets, but nothing much has ever been heard of them afterward. Whether these tubeless sets are deliberate fakes foisted upon a credulous public, or whether they are delusions of some budding inventor, it is difficult to say. The fact is, that it is highly improbable that such a set—that is, a practical one—has been built to date; though it is, of course, possible that it can be invented in the future. At the present stage of the art, however, it is quite impractical. Of course, we can easily picture in our minds a tubeless radio set. As a matter of fact, our first radio sets worked by crystals were of that description, but no loudspeaker operation was possible, unless the set was in the shadow of a broadcast station. It is true that there are still possibilities in the crystal detector that perhaps we, today, do not appreciate, and it is conceivable that in the future, tubeless loudspeaker sets, with some sort of crystal detector, may come into use.

The whole matter of efficient radio detection is still somewhat shrouded in mystery. Every once in a while we hear reports of some housewife getting radio music out of a kitchen pan, which is not even connected to an aerial and

ground. Water faucets have also been known to give off radio music and, recently, the newspapers reported an automobile that produced radio music somewhere under the hood, although it had no automobile radio installed nor, for that matter, any radio. It is conceivable that these freak conditions may be worked out in the future into something that we today do not know. When additional research has been made, and these laws are better understood, perhaps then we may have a tubeless radio; but my private guess is that, for many years to come, we shall worry along with the present-day tubes.

Then there is a sort of revolutionary invention in the tubes themselves. I refer to the radio tube that requires no filament current—a cold radio tube requiring no "A" power. Some advances have been made in an electronic tube of this kind; and it is conceivable that, within the next ten or fifteen years, our radio sets may have filamentless or cathodeless tubes. Again, this is an evolutionary process, and the change is certain not to come over night. It will take many years of research and, after the theoretical points have been covered, it will take another few years before the tube becomes commercially available.

For years there has also been reported another phantom radio set, supposedly sponsored by one of the big radio corporations. This particular variety of radio set is imagined to be secretly operated. The alleged plan behind it is that the company will rent you a radio set at so much a month; new and super-broadcast stations are to be put up, which will admit no radio advertising. An ordinary radio set will not work from such a super-station, and cannot be made to receive these super-programs; only those sets for which you pay rent can bring them in. This is another fable, imagined by some fertile writer, most probably as a joke. There is, of course, no basis for such a set, and it is not conceivable why any radio manufacturer, at present, would wish to put out such a receiver. The idea of emitting programs without advertising, engineered especially for such sets, is not an economical one, and is not likely to come about.

Coupled with this idea, we have a supposed new radio set which, automatically, eliminates all radio advertising, for the benefit of those listeners who object to advertising. The set itself is supposed to remain silent while radio advertising is going on.

Again, this idea is not impossible. Indeed, patents have been granted on this very idea; but the trouble in the present stage of the art is that the set will remain silent when *anyone* talks, irrespective of whether the talk is advertising or not. In other words, the automatic robot inside of the set will not know how to distinguish between an announcer dispensing a raw advertising talk and, let us say, President Roosevelt giving one of his important radio addresses.

Twenty years hence, this problem may have been solved, although personally, I have my doubts that it will ever come about.