The period of the teens and twenties of the last century, our wireless industry had many difficulties. Here is one that was solved with a good distributor who was looking out for its patrons. This company was in Toledo and got off on the ground floor from the very beginning. Presenting our article which ran for more than three pages however it explains in detail of the day. Deceptive advertising was common place.

Our feature; Wm B. Duck Co. This supplier had a wide spread mail business and a trade store in Toledo. This written material is from their catalog. Lots of material about this company can be found on the Google plus catalogs are still sold on Ebay. I've also made an earlier Tribute towards this very reputable company.

Three pages follow. CAVEAT EMPTOR

W8SU 2016

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CAUTION

Excessive and Untruthful Ranges Advertised for Wireless Instruments.

Do Not Be Misled by Untruthful Advertisements of the Range of Wireless Instruments.

Note.—We reproduce on the following pages a "Caution Pamphlet" prepared and widely distributed by this company during the year 1915. This pamphlet met with such an unusually hearty welcome and reception among experienced wireless operators to warrant our incorporating it in its entirety in succeeding editions of our catalogue. Since wireless will be even more popular with the important part played by amateurs during the recent war, prospective purchasers of radio apparatus should manifest greater vigilance than ever.

It is with deep regret that it has become necessary to caution the inexperienced in wireless on the unscrupulous advertising that is at present found in a few magazines on the ranges of so-called wireless instruments. It seems too bad, that in a subject fraught with so many possibilities for helpful intellectual recreation and advancement, particularly among the younger people, that an unscrupulous element, ever on the alert to pilfer dollars for junk, will take advantage of the ignorance and credulity of young men and those inexperienced in wireless, and advertise, at seemingly low prices, instruments of questionable worth, for which ranges are claimed that are obtainable only with the very best commercial sets. Of course, such concerns soon find themselves in bankruptcy, no matter how profitable their business may be in the beginning, **because no business built on fraud can long endure.** Particularly is this so in a business where success must of necessity depend upon good will and repeat orders. We speak from personal experience when we say that were it not for the kind words spoken of us and our instruments by our many patrons, and the natural stimulus of business that comes from this source, together with the many repeat orders that come from satisfied customers, that our own business would be a disastrous failure. It is, however, the policy of some persons to attempt to defy the basic principles of business success, and reap a quick harvest before an awakened and indignant people are aroused to their unconscionable perfidy. But even in this, the disastrous experiences of others hold out little hope.

Last year a concern whose advertising, pamphlets and wireless instruments were about identical to that of those concerns to whom we refer, went into bankruptcy, owing thousands of dollars to magazines and others who supplied them with much of the material used in making their sets. This concern lasted just one year. Our files are full of letters teeming with indignation because of the worthless junk that was sold to them.*

When these other concerns come to the same end, there will, perhaps, be those who may not even have the satisfaction of getting that for which

*Since this article was written every one of the concerns we had in mind has gone out of business owing thousands of dollars to persons who could obtain neither the goods nor their money.

they so foolishly bargained. According to familiar principles of law, all cash in the possession of a concern when it becomes bankrupt, becomes a part of the entire assets and is pro ratably distributed among all the creditors.

In our own catalog we endeavor as far as lies within our power to give a correct estimate of the ranges of our instruments. The ranges we advertise have all been verified many times over, not only by ourselves, but by our many patrons. In fact, the estimates on all our wireless instruments have in numerous instances been doubled, but we do not regard these freak instances as fair standards by which to estimate the ranges of our sets. In fact, there will be many cases where even the results we claim will not be obtained. The reasons for all this are quite elaborately set forth in our catalog. If there is anything uncertain about wireless, it is the range of a receiving set. It is assumed that if a transmitting set, for instance, has a range of say 100 miles that only those stations 100 miles distant can pick up the signals from such station, and then if the extreme transmitting range of a station is 100 miles, only the very best receiving sets will give to such station its greatest possible range. For instance, you should not expect to pick up signals from such a station 100 miles distant with a receiving set consisting of an ordinary tuning coil and other ordinary instruments. A receiving transformer of more than ordinary selectivity and a first-class head set, and other instruments of equal merit, would be necessary.

When a concern, therefore, advertises a range of 2,500 miles for a receiving set consisting of a tuning coil, fixed condenser, detector and a very ordinary head set, they are making claims that they know cannot be substantiated under the conditions that wireless sets are used.

Consider for a moment some simple facts capable of exact analysis. The range for first-class transmitting sets is usually estimated at 100 miles per kilowatt in the daytime and about twice this distance in the night time. Therefore to receive a distance of 2,500 miles with even the very finest commercial set, in the daytime, it is necessary that the station have a capacity of at least 25 K. W., and in the night time that the station have at least half this capacity. At the present time there are not over five stations of this size in the United States, and they are in different sections of the country. When it is said that a receiving set has a range of 2,500 miles it means that it has a range of approximately 100 miles for each 1 K. W. of energy of a transmitting station. However, the range of a wireless set decreases in proportion to the capacity of the set, and a 25 K. W. set, therefore, would not send twenty-five times as far as a 1 K. W. set. A few familiar instances, which readers of daily news may be able to recall, will show how utterly absurd these claims are. When the steamship Titanic was in distress, wireless signals were picked up by the Carpathia, a distance of 200 miles. The Carpathia was something like 700 or 800 miles from shore and used a 2 K. W. transmitting set, and yet was unable to send messages direct to any land station. The messages had to be relayed through another ship. Two hundred miles was the maximum range obtained by the wireless set on the Carpathia in the night time over salt water, the most ideal conditions for effective wireless transmission. It is also well to remember that even a range of 200 miles was obtained only in connection with a very sensitive and high class receiving set at the other end.

With these facts in mind, it is not a very difficult matter to determine the approximate range of any receiving set. Without reference to the in-

struments, the aerial should in the first place be as high as is reasonably possible and from 80 to 150 feet in length. A good ground is also indispensable. The distance from which signals may be picked up will of necessity depend upon the instruments in the receiving set. In order to get the most efficient results it is but reasonable to assume that the utmost harmony must prevail. The receiving station must be in perfect synchronism or tune with the sending station. The instrument with which the most effective and successful tuning is accomplished is what is familiarly termed a Loose Coupler or Receiving Transformer. A tuning coil cannot possibly give the results that are obtainable with a receiving transformer. An efficient receiving transformer will increase the range of a receiving set fully 50 per cent.

Then there is the head set. There are several different makes of head sets on the market, for many of which high claims are made, and it is not a difficult matter in looking over the catalogs of reputable concerns dealing in wireless instruments to pick out an efficient head set. A first-class 2,000-ohm head set will increase the efficiency of a wireless station from 20 per cent. to 30 per cent., and in many cases it makes communication possible with stations that would be utterly closed to it without such a head set.

The detector is also of great importance, because it is the detector through which the signals must come before they are heard in the receivers. In order for a detector, no matter how efficient, to pick up the signals, the set must in the first place be properly tuned. There are many different types of inexpensive mineral detectors that serve remarkably well, but it is in the adjustment you are able to get with the detectors, and the kind and the sensitiveness of the mineral used, that permits of good results being obtained. The most sensitive type of detector to date is the Audion Detector, which is one and a half to three times as sensitive as any form of electrolytic or crystal detector. This detector has in many cases made possible communication with stations that would be otherwise closed to it. For instance, only a short time ago we furnished a first-class receiving set, costing between $35.00 and $40.00, to a patron in the extreme western part of the state of Iowa, who was unable to pick up the time in the daytime from the 100 K. W. station at Arlington, with a crystal detector, though there are many instances where the time has been picked up from this station with crystal detectors. All the other instruments comprising the set were first-class instruments. An Audion Detector was purchased and the signals from Arlington came in clear and loud. Yet this person was not over 2,500 miles from Arlington, the most powerful station in America, and was not able to pick up the time without using the Audion Detector.

How unfair it is, therefore, to advertise a range of 2,500 miles for the instruments of very questionable quality mentioned above.

Material you wouldn't expect a supplier to place into general knowledge when Radio was in its infancy. Caveat emptor W8SU 2016 - Thanks to W8JYZ for the bandwidth.