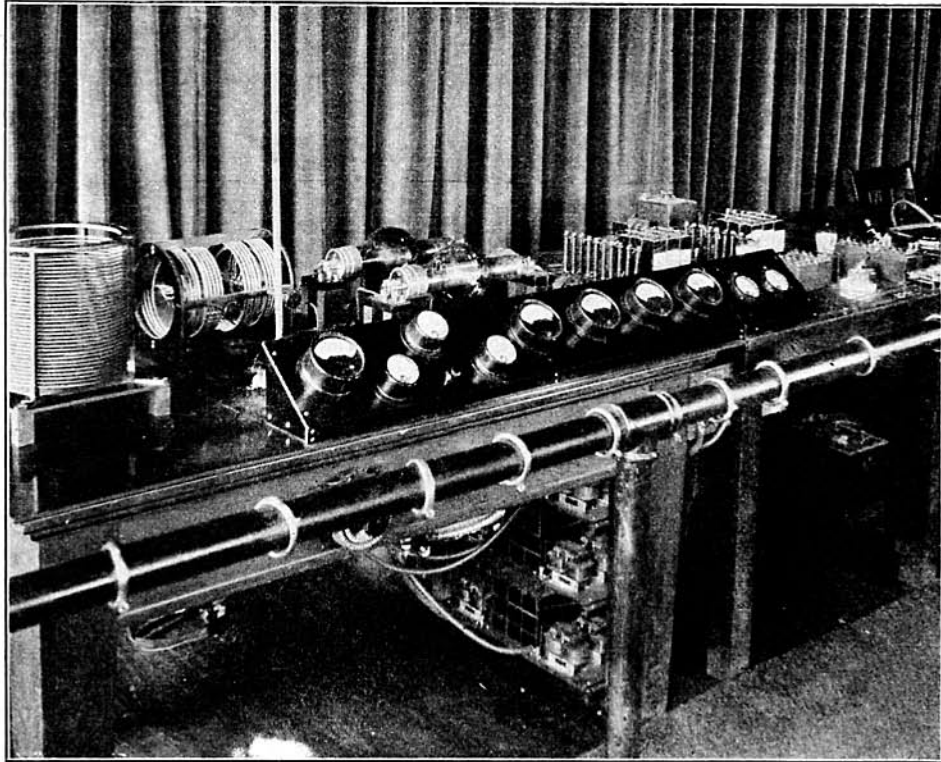


# Broadcasting Station WGR at Buffalo, N. Y.

THE radiophone broadcasting station WGR of the Federal Telephone and Telegraph Company, Buffalo, has only been in operation since May, 1921, but has become very familiar to amateurs in that neighborhood. The officials of the company are continually endeavoring to improve the station and many special devices have been incorporated so that various types of voice and music can be transmitted most effectively. The station is continually heard in the daytime at Rochester. The studio in which the performances are given is very well-appointed and sound-proof. A very elaborate system of sound-proofing prevents any noises from the outside affecting the microphone. The antenna consists of a 6-wire cage 3' in diameter and is erected between two 40' steel masts on the roof of the factory. The antenna is approximately 80' from the ground. The ground connection is made to the water and steam pipe system in the factory, and additionally, a direct copper ground is secured to large copper plates buried in the factory courtyard. Large bakelite panels are used where the antenna passes through the walls of the building. As the fundamental wave length of the antenna is approximately 305 meters, no series condenser is required to transmit on 360 meters and consequently, excellent radiation is obtained. The transmitter has a power input of about 1 kilowatt and is supplied by 2000 volt direct current generator, directly coupled with a single phase 25-cycle induction motor operating on the power line. The major portion of the commutator ripples is eliminated by the use of high voltage condensers and iron core chokes; about 37 henries of inductance are used in this filter system and are so distributed that the filter is alternately inductive and capacitive from the generator to the vacuum tubes. The generator is further protected from radio frequency surges by the insertion of high frequency chokes throughout the line. A speech amplifier with two tubes is used between the microphone and the modulator system. These tubes are coupled by resistances. The power tube filaments are operated on 60-cycle AC, but the amplifier filaments are supplied with current by means of storage batteries. Plugs and jacks are



View of the Transmitting Apparatus of the New Broadcasting Station. The Arrangement Is Unusual and Convenient.

used for the voice-control circuits. Meters are supplied for the measurement of the antenna current supply voltage, the currents to the several tubes, both plate and grid current. The meters are mounted on the set to permit constant observation by the operator. For the various types of reproduction, several different microphones are used. For ordinary speech and announcements, the common carbon microphone is used and for special types of transmission, a magnetic microphone is used in connection with considerable additional voice frequency

amplification. A small receiving set is mounted near the transmitter which permits the operator to check the modulation. A test of this set indicates that the efficiency between the direct current generator and the antenna is approximately 48 per cent. Reports have shown reliable daylight communication over approximately 150 miles. The greatest night range of this transmitter reported as yet, is 750 miles, but it is believed that if the operation of the station continues, signals will undoubtedly be transmitted over considerably greater distances than this.

## Why Radio Sales Fall Off

ONE of the biggest advertising agencies in the country recently gave publicity to the fact that most manufacturers, when planning to put out a product, have their advertising man go through the plant and study in detail very carefully every feature of manufacture. There they stop. They proceed to advertise what their product is and what it will do. This agency pointed out, however, that the sad part of it is that most of these manufacturers and their advertising men do not know how their material or service is actually adapted to the average home because no attempt is made to study the home or the demand.

I think we have had a very fine exhibition of this in the radio business. Here is a thing that can be made a real business, but with the first sign of interest on the part of a public that has money and has been holding it because of the very thing I have cited above, the radio manufacturers and retailers proceed to go at it in the old way and turn out their products without any knowledge of what those interested in the same really think or want. The idea has been to turn out everything possible, put on all the

charges possible, and let the devil take the hindmost.

This is what killed business in the general

field and it is what will successfully kill the radio business. It is all right to lay it to static, but I think when September comes, unless the radio manufacturers and retailers change their methods, they will find that the public is also static.

For instance, in addition to opening your columns to manufacturers, why don't you invite the amateurs to write in and tell you their troubles?

To give you a fair example, I will cite my own case, which has been duplicated in various ways among all my friends, and possibly you may find it worth while to let a few manufacturers know what the novices and amateurs have been up against, due to the ignorance of the manufacturers and retailers. For instance, when my interest was first excited I proceeded to write for all the catalogs that were advertised. Sums ranging from two to thirty-five cents were called for. I sent this money which totaled up to several dollars. Some of the catalogs I never received. In some cases, I received post-cards that the catalogs would come later, and for some of these I am still waiting. In other cases I got a few small pam-

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Did This Happen to You? You Have Wired Your Instrument After Several Hours' Work, and Then in Placing the Knob the Set-Screw Breaks!