



## A New Amateur Wavemeter

of the condenser have been increased as compared with the 587-A, resulting in an improvement in its frequency characteristic. The type 387-A speaker filter is still available for use with the 171 type tube only.

Where a dynamic or other type of speaker having an impedance widely different from that of the tube used, an output transformer must be used. The type 587-O transformer is of proper design to adapt impedances of the order of 10 ohms to tubes of 2000-6000 ohms impedance. The transformer is designed to operate with 55 mils plate current without impairment of quality and it is thus adapted to work out of the type 250 tube.

Speech amplifiers for group address systems and remote studios are also included in the new line of transformers. The 585-M and 585 M2, are designed to work out of standard (200 ohm) single and double button microphones respectively. These transformers replace corresponding instruments of the 284 type over which they represent a considerable improvement in quality.

The type 585-D and H may be used in line amplifier or group address systems, as of course may the push-pull and output transformers. This line of transformers is completed by transformers of the 284 type already listed, i. e. Type 284-E, line to grid type and 284-D, plate to line transformers, for line amplifiers.

Essential data on the new transformers follows:

Type Ratio	585D 1:2	585H 1:3.5
D. C. Pri. Resistance	2000 ohms	2000 ohms
D. C. Sec. Resistance	9300 ohms	11000 ohms
Sec. ind.	60 cycles 316H	866H
Pri. ind.	60 cycles 79H	71H

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### J. K. Clapp Joins Staff

It is with great pleasure that we announce that Mr. J. K. Clapp, so well known in the amateur field, joined our engineering staff on July 1. Mr. Clapp is a graduate of the Department of Electrical Engineering of the Massachusetts Institute of Technology, class of 1923. Since graduation, he has been engaged in instruction at Technological, and in consulting work.

During the war, Mr. Clapp served in the Navy on radio problems, holding the rank of ensign.

The new amateur assignments will become effective January 1, 1929, and if present indications are worth anything, more drastic regulations will be made to require a strict adherence to the band limits. In the past, the Department of Commerce has been rather lenient, for off-band operation was not particularly serious. But increased commercial operation is changing this, and off-band operation will not be tolerated. The 37 to 42.8 meter band is probably the one in most general use, and when we consider how liberal many operators are with regard to those limits, it may seem to be an almost impossible task to compress the present inhabitants of this band into the new limits of 41 to 42.8 meters. But it seemed equally impossible to get everyone below 200 meters, to impose quiet hours where necessary, and to accomplish many other things that are now history, and these same things have proved to be the necessary driving force to make progress and keep alive the fascination of the game.

The thing of first importance is to keep the transmitter wave within the band, and this requires an accurate wavemeter. Thanks to the Standard Frequency Transmissions, most stations are now equipped with a wavemeter which has been considered to be sufficiently accurate. Usually these wavemeters consist of a condenser of low capacitance and an appropriate coil. One scale division amounts to more than one percent of the wavelength being measured. But 42.8 meters is only about 4½% more than 41 meters, and the entire band is contained within about four scale divisions. Obviously this is not good enough, and the operator is able to tell only that he is within the band, and even this is doubtful if he is working near one end.

It was with these facts in mind that the Type 558 Amateur Band Wavemeter was designed. This meter follows a design generally used for broadcasting station frequency meters in that the variable condenser is shunted by a fixed condenser, greatly reducing the tuning range. This, of course, means more divisions per meter, and greater accuracy of setting. The rotor proper consists of two rotor plates of the straight line wavelength type, and two circular rotors. The



capacitance varies with the setting of the S. L. W. plates, while the circular plates cause no change as they rotate, but act like a fixed condenser. The whole condenser is enclosed in a crackle finished metal can. The spreading of wavelengths by this method is such that one scale division represents about ¼ of 1 percent of the wavelength being measured. It is possible to set the scale closer, with care.

The indicator is of the neon type, especially made for this purpose. It has a low ignition voltage, and draws so little current that it produces a negligible change of calibration when lighted.

There are five coils four of which are wound on bakelite tubing threaded for the spaced turn coils. These coils cover the 10, 20, 40, and 80 meter bands. The five meter coil is a simple loop of heavy brass rod.

In broadcast stations, it is common practise to have a resonance indicator permanently tuned to the station wave. This shows the operator that he is at least near the proper wavelength, and that his output is about normal. The Type 558 wavemeter is very useful to the amateur operator for the same purpose. It gives a fair indication of wavelength, output power, and accuracy of keying if mounted near the transmitter, and within sight of the operating desk.

The Type 558 Wavemeter is provided in a strong packing case with positions for the condenser, five coils, and a calibration chart. Accuracy of calibration is to within ¼ of 1%. The price of the Type 558 Wavemeter is \$20.00.