The Use and Virtue

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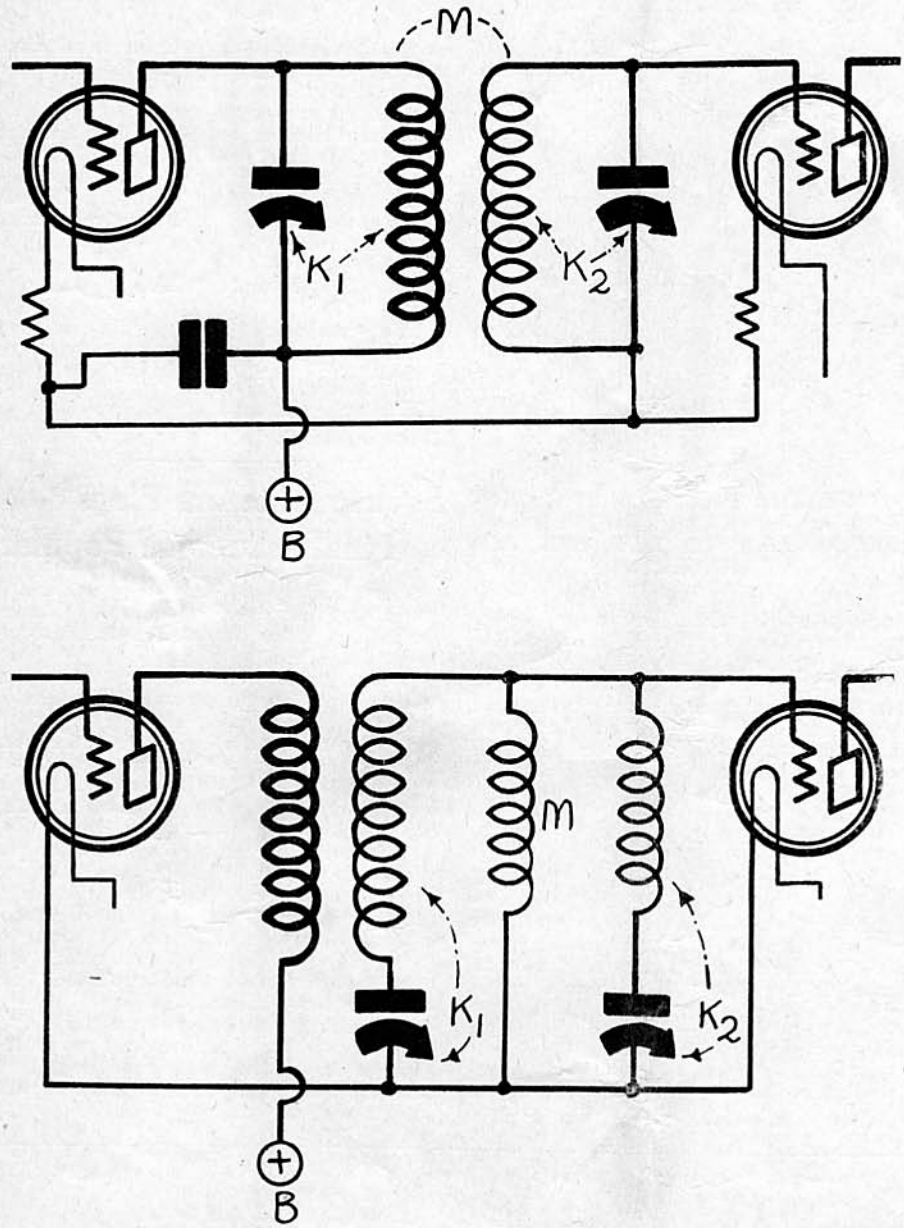

FIGS. 1 AND 2.

A BAND PASS FILTER, CONSISTING OF TWO EQUAL TUNED CIRCUITS, COUPLED BY MUTUAL INDUCTANCE. (FIG. 1, TOP)

A BAND PASS FILTER, CONSISTING OF TWO EQUAL TUNED CIRCUITS, COUPLED BY A COMMON REACTANCE. (FIG. 2, LOWER)

WHEN ordinary tuned circuits are used in a receiver it is difficult to obtain selectivity and quality at the same time. That fact has been known as long as tuning, but it was not recognized as an evil until broadcasting began. Nothwithstanding the known facts, receivers have been brought out which were claimed to be "as sharp as a razor and absolutely free from distortion."

In any receiver employing ordinary tuned circuits the choice must be between selectivity and quality, or a compromise effected. If conditions require a very high order of selectivity, the quality must assume secondary importance. If quality is the prime requisite, selectivity must be mediocre.

Since DX requires high selectivity for the uninterfered reception of one station, the recipient must be satisfied with the full low and medium notes in the signal, without getting so much of the higher notes.

If the signal received is to contain all the notes in proper proportion, the receiver cannot be extra-selective and the recipient must be content with a little interference from other stations. If the desired station is at a considerable distance its signals will probably be less intense than the signals from a closer station to which the circuit is not tuned.

Band Pass Filters

That is the condition when ordinary tuned circuits are used in the receiver. But there are means available whereby the receiver may be made highly selective without at the same time impairing the quality.

There are various band pass filters which have the characteristic of accepting signals lying within a certain band with very little attenuation and at the same time rejecting those lying outside that band.

These filters do not cut off the higher audio frequencies in the signal and hence they do not impair the quality. But these circuits cannot be called "ordinary," for there are only a few receivers in which they have been incorporated.

Band pass filters are especially applicable to the intermediate amplifier of a Super-Heterodyne because they can be adjusted once for best response and left alone. They are also suitable for broadcast waves, but introduce a little complication in the tuning mechanism. Some excellent broadcast receivers incorporate band pass filters successfully, and undoubtedly there will be many more in the near future, as there is an intense interest in the subject at this time.

Pass Band Determination

A simple band pass filter consists of two tuned circuits coupled together, both tuned to the same frequency. The reception characteristic in the pass band region depends on the degree of coupling between the two tuned circuits. Generally, the characteristic will contain two peaks with a depression between them. The closer the coupling between the two circuits, the farther apart will be the peaks and the deeper the depression Be-

WNYC IS LOSER ON TIME PLEA

Washington.

The application of WNYC, operated by the City of New York as a municipal station, for full time on the 570 kilocycle channel, was denied by the Federal Radio Commission. The station shares time with WMCA transmitter, Hoboken, N. J., which station also has pending an application for seven-eighths time on this channel, and later will be given a hearing.

The Commission also denied the applications of WKBO, at Jersey City, N. J., operated by the Camith Corporation, for full time and an increase in power, and Edwood W. Lippencott, Long Beach, Calif., for a construction permit. They Jersey City station requested full time on 1,370 kilocycles, with a power assignment of from 500 to 5,000 watts. It now shares time on the 1,450-kilocycle channel with three other stations, with 250 watts power.

WNYC contended at its hearing before the Commission that, under the allocation, it is not afforded sufficient time to broadcast necessary features in the interest of the people of New York. The mayor of New York City, J. J. Walker, made the application for full time on behalf of the station.

Mayor Walker said at New York City Hall: "I think it is so important to the city that, if possible, and if necessary, we will carry the matter into the courts."