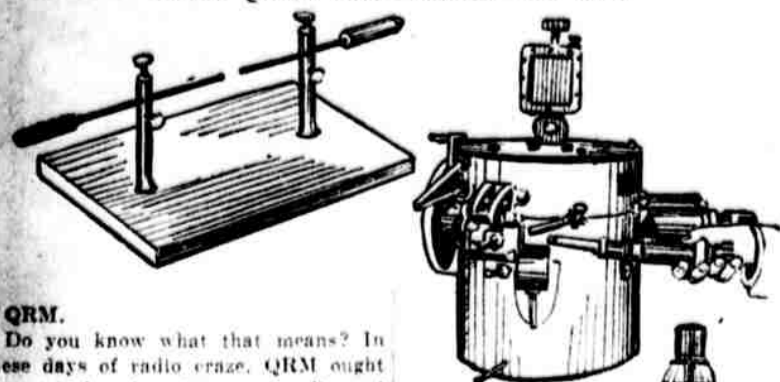


### RADIO IN THE HOME

By HENRY M. NEELY

#### Those Queer Code Noises You Hear



QRM. Do you know what that means? In these days of radio craze, QRM might almost be adopted into our colloquial language. Everybody is being QRM'd.

If you could understand the Continental code used by wireless operators and could listen in and read some of the stuff that is constantly flying through the ether, there would not be a night that you would not hear one of the men send, "Pis rpt QRM."

In ordinary English, that means, "Please repeat. Another station's signals are interfering and I cannot read your message."

QRM means "I am being interfered with." And, with most of the sets now on the market, designed for ease of operation rather than sharpness of tuning, QRM is a constant occurrence.

You will be listening peacefully to the "Samson and Delilah" aria, perhaps, when suddenly it will be broken up by something that sounds like somebody sawing wood or filing iron or perhaps it will be one of those funny little squeaky imitations of a canary bird on a box or a sort of loud sing-song, rising and falling rapidly like a whistler practicing a trill.

These are code signals and it is interesting to know the difference between them even though you cannot read the signs.

The rasping, buzzing, usually low-toned notes are "spark" stations. We have already learned how condensers discharge their electric energy in sudden bunches, vibrating at almost inconceivable rapidity. The spark station uses an apparatus that has a gap or opening in the circuit. When the electric energy piles up in the condenser to a certain strength it suddenly discharges with a powerful surge that is strong enough to make the electric current jump across this gap or opening in the form of a spark.

The current swings first one way and then the other, charging the condenser each time, first with positive, then negative and again positive, alternating thus until the energy dies down, each time sending it in the form of a spark across the gap until the energy used up in the form of the light and heat of the spark entirely empties the condenser.

But these alternations are so inconceivably rapid that there are thousands of them during the time of the shortest little spark that a man's hand can make and perhaps several million of them in a second.

These spark signals use what radio experts call "damped waves"—that is, the original energy sent out by the discharge of the condenser dies down just as the sound of a big bell dies down after it is struck with a hammer until all is silent again. The resistance of the air and the natural resistance of the metal "damp" the sounds of the bell and you hear the noise gradually trail off into nothing.

So the spark "damps" the electric energy, but it does it a couple of million times a second.

The little chirpy, canary-bird noises and the gurgling, liquid-sounding dots and dashes are usually made by what operators call "continuous wave" stations, referred to in all the radio magazines as "C. W."

This form of radio energy is sent out by an audion bulb. The little audion bulb that you use as a detector in your receiving set is all the time sending out a stream of radio waves while you are listening to a concert. These waves are extremely weak, but, if you had another aerial within a few feet of your own, you could hear them in the form of a steady little hum in the phones.

Radio engineers have developed special forms of bulbs or tubes for sending purposes and these tubes send out radio energy not damped, as the spark signal is damped, but continuous and with radio waves of the same size and power all the time.

The broadcast concerts are sent out in this way. All radio telephone work is done on this "C. W." and it is also used for the Continental code messages by means of special devices in the sending station. "C. W." is a favorite form of radio among skilled amateurs and, by means of it, amateur messages have been sent all the way across the United States and from the United States to Great Britain and the Continent.

Then there is the QRM that sounds like a whistler trilling. There are two distinct notes, one higher than the other and they "back-slap" like a rubber ball bouncing rapidly between two surfaces.

These are "art" sending stations.

To the left, the spark gap of an amateur spark set. Above, a modern A. F. transmitter. To the right, a 250 watt vacuum tube by which the concerts are broadcast.

These use a big arc light for power and this light, by means of the great spark that is constantly playing between its points, sends out a steady stream of radio waves. The steady stream is sent, we will say, on a wave length of 150

meters. All the time the sending key is open, this stream of waves remains at 450 meters.

Now, when the operator presses the key, the energy from the arc is diverted through a different part of the apparatus and this part is so constructed that the wave it sends out is only 425 meters.

So the skilled receiving operator who wants to read this message finds it, perhaps, on the steady wave of 450 meters and then "tunes down" to 425 meters and reads only that note, either tuning the 450 note out or else concentrating on the 425 that he can read the code.

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#### Today's Radio Program

Philadelphia Station (WT) (Srawbridge & Clothier)  
 1:30 P. M.—Helen Larson radio news bulletin.  
 2:30 to 4:30 P. M.—Concert by Loreta Kern, pianist; Elyse Lewis, singer; Harold Simons, baritone; and other popular singers.  
 5:30 to 6—Baseball scores.

Philadelphia Station (WOO)  
 As 12:55 to 1 P. M. (daylight-saving time)—  
 As 12:55 to 1 P. M.—Piano selections.  
 2:30—Piano recital by Mrs. Frances Bap-  
 tist and the following soloists of the B. C. G. Association: Mable E. Smith, soprano; Alice Anderson, soprano; Mabel Brown, soprano; Charles E. Smith, baritone; Joseph Reche, pianist; John Grummett, saxophone; Aaron Harrison, trombone; Andrew Wilson, violin; and John Johnson, piano; Genevieve Johnson, piano.

Philadelphia Station (WIP) (Gimbel Brothers)  
 1:30—Selections for the Gimbel Orchestra.  
 2:30—Piano recital by Mrs. Frances Bap-  
 tist and the following soloists of the B. C. G. Association: Mable E. Smith, soprano; Alice Anderson, soprano; Mabel Brown, soprano; Charles E. Smith, baritone; Joseph Reche, pianist; John Grummett, saxophone; Aaron Harrison, trombone; Andrew Wilson, violin; and John Johnson, piano; Genevieve Johnson, piano.

Pittsburgh Station (KDKA) (Westinghouse)  
 12:55 to 1 P. M.—at fifteen minute intervals.  
 2:30—Piano recital by Mrs. Frances Bap-  
 tist and the following soloists of the B. C. G. Association: Mable E. Smith, soprano; Alice Anderson, soprano; Mabel Brown, soprano; Charles E. Smith, baritone; Joseph Reche, pianist; John Grummett, saxophone; Aaron Harrison, trombone; Andrew Wilson, violin; and John Johnson, piano; Genevieve Johnson, piano.

7-41—Government market reports and a report of the New York Stock Exchange.

Baseball scores: Operations for Girls, by Miss Esther M. Smith, former supervisor of the U. S. Women's Employment Service, and director of the College

Vocational Bureau of Pittsburgh, and now teacher in the Latimer Junior High School; Building Trades, by Louis Brandt, house engineer and project manager, Commercial Housing Corporation, 9—3426.

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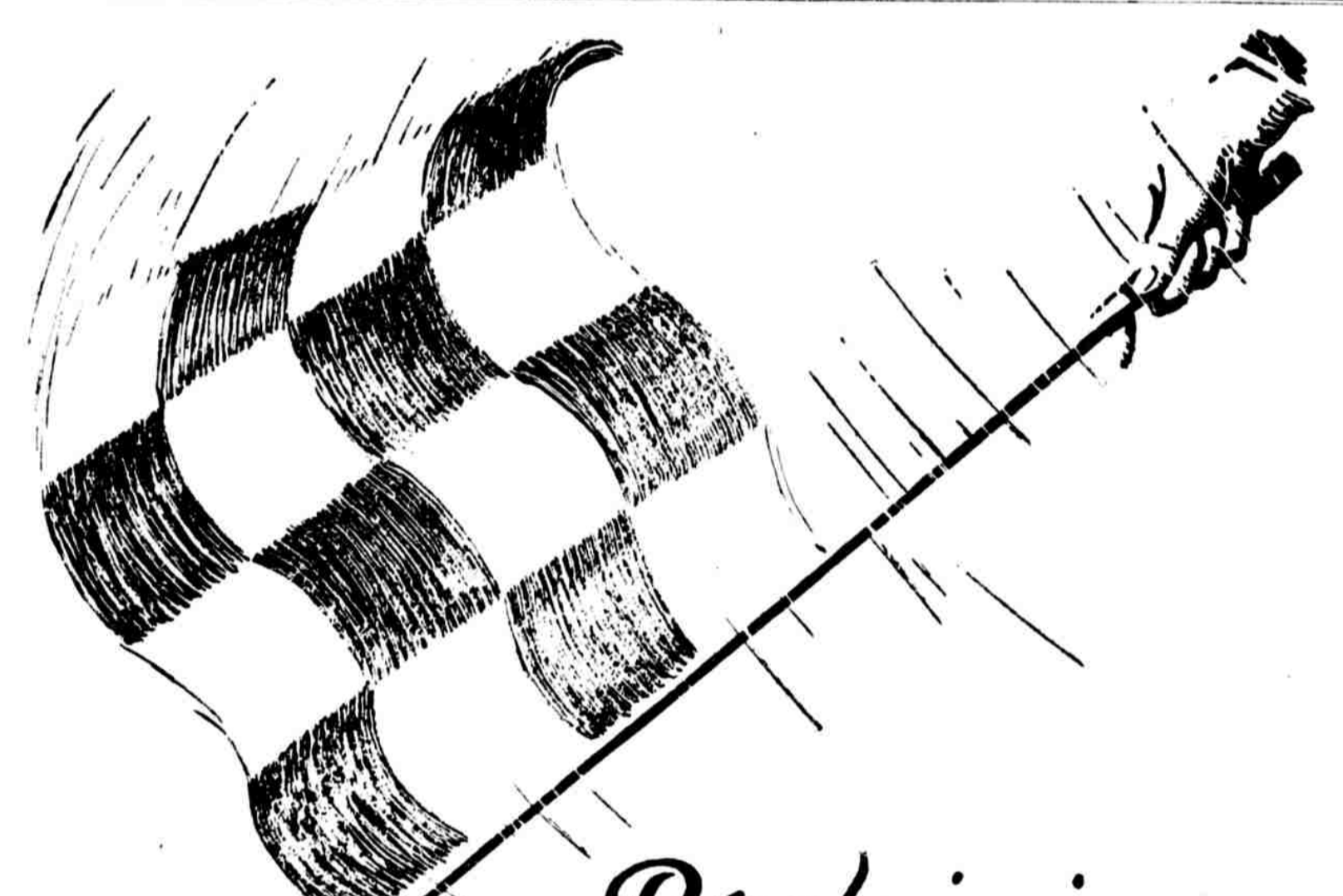
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