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How to Become a Radio Reception "Prophet"

Forecasting Static With Three Simple Instruments

ACCORDING to Mr. Eugene Van Cleef in "Popular Radio" the possibilities of good or bad reception for the next twelve hours may be predicted with remarkable accuracy by means of three easily purchased and easily manipulated instruments. These are the hygrometer, by which the relativity of the atmosphere is determined; the ordinary outdoor thermometer; and the aneroid barometer which registers air pressure. Mr. Van Cleef claims that here is an eminently worth-while opportunity for investigation for both experimenter and "fan." Much entertainment, in any case, can be derived from tracing the periodic weather conditions that are held responsible for changes in radio reception.

THAT radio reception fluctuates in quality with the variations in our atmospheric conditions seems certain.

Some attribute to the weather too much influence on radio reception, and others now are ready to say that atmospheric conditions play no part. A number of persons have suggested a sun-spot influence, but, according to recent Press dispatches, those in charge of investigations of the sun spot relationships declare this theory exploded. In the face of these contradictory views, the writer is convinced, after a long period of observation, that the degree of static which interferes with our radio reception varies with atmospheric conditions—more particularly with pressure. Assurance of this relationship is based upon the correlation of reception conditions with the daily passing high and low pressure areas. The relationship is so clear-cut that definite statements may be set up which will serve as guides to those desirous of forecasting daily the probability of static. Before recording these conclusions we should first note the nature of Highs and Lows and some facts regarding their behaviour.

PRESSURE AREAS.

IF the reader will secure successive weather maps like the diagram, and watch a given high pressure area on successive days, he will note that it moves across the country normally at about the average speed of a passenger train, so that in the course of about four 24-hour days it travels from the Pacific coast to the Atlantic. Accompanying the High is a Low which travels at about the same rate. No two Highs nor two Lows occur next to each other. The Highs and Lows generally occur in pairs, a High following a Low, or a Low following a High.

These passing pressure areas, or "storms," indicate the nature of the weather which any locality is likely to have. Since they always travel in an easterly direction, and since their rate of motion is known, we can forecast the weather for a given locality if we know what the pressure and accompanying weather conditions are to the west, as shown by these areas. Space limitations do not permit of a detailed account of the

special problems associated with the fascinating field of weather forecasting, but enough perhaps has been said to direct attention to the occurrence of these pressure areas which seem to be so intimately associated with our static troubles.

THREE SIMPLE TOOLS.

SOME persons may already have acquired the impression that the situation here noted is too complicated for them, and consequently at this point are ready to give up the idea of forecasting for themselves. These fears, however, need not be further entertained, as the operation of forecasting may be reduced to fairly simple terms. One can accomplish much in this work with the aid of three simple instruments—the barometer, outdoor thermometer and hygrometer.

Just what is a barometer and what does it tell? We have learned by experiment that at sea level on a normal day, the atmosphere weighs 15 pounds to the square inch. This weight we call pressure. If a glass tube about 34 inches long were filled with mercury and the open end immersed in a cup of mercury, the mercury within the tube, under

the conditions just noted would fall to a height of 30 inches above the level of the cup basin. In other words, the weight of the column of mercury within the tube would equal the weight of the air pressing outside upon the mercury surface in the cup. This weight represents the air pressure and the length of the column is interpreted as the air pressure. An atmospheric pressure of 30 inches has been adopted as normal. If the height of the mercury column rises above 30 inches, the pressure is high; if it fall below 30 inches it is low. On the weather map the Highs and Lows to which we have referred mean exactly this.

THE ANEROID BAROMETER.

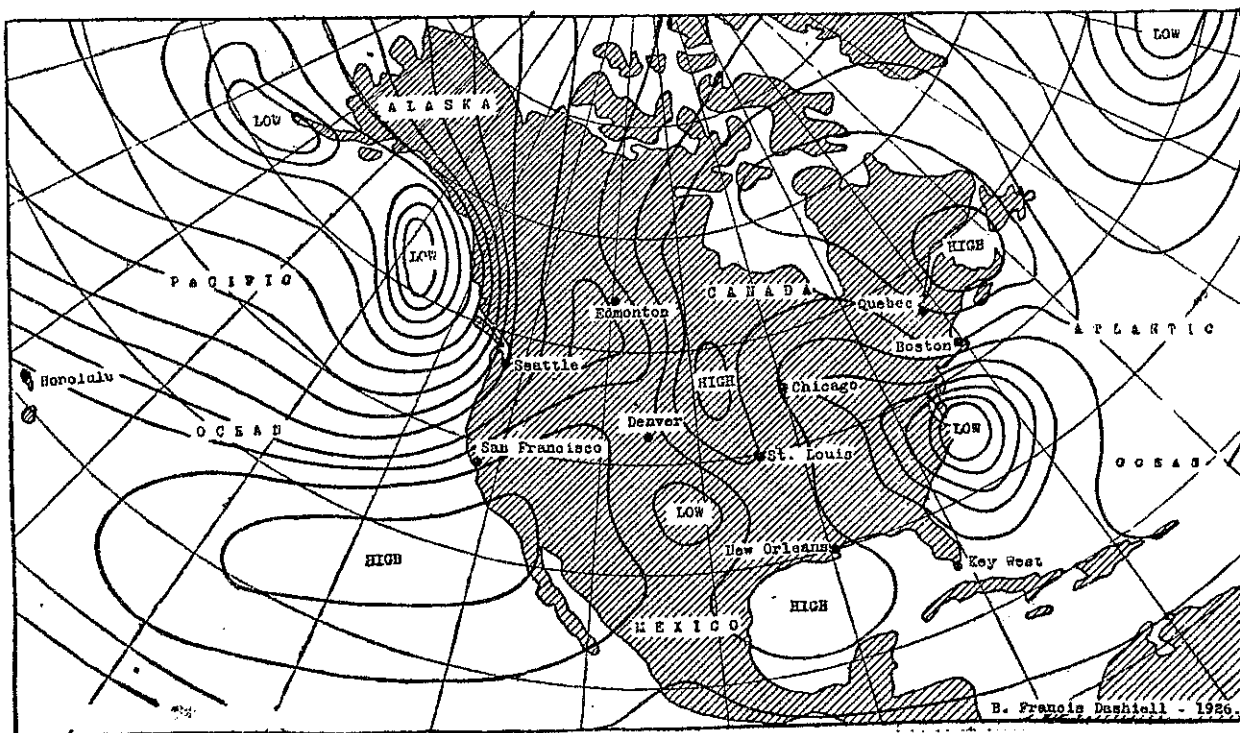
THE mercurial barometer is too expensive for most of us to possess, and, furthermore, is rather awkward for a novice to use. So in its place the compact and convenient aneroid barometer, in which air is utilised, is recommended. It is calibrated according to the reading of the mercurial barometer, and is so arranged that anyone can read it easily and note whether or not the pressure is rising or falling.

GENERALLY if the pressure reads above 30ins. static will be absent, and if below it will be present. If the barometer is just below 30ins. in the morning and has been rising all the preceding night, the prospect of no static for the evening is excellent. If, on the other hand, the reading is just above 30ins. and the pressure has been falling during the preceding twelve hours, then static is almost certain during the next twelve hours. That is simple enough; but exceptions creep in occasionally, and to make allowances for them the outdoor thermometer and hygrometer will assist us.

THE HYGROMETER.

EVERYONE is familiar with the use of the thermometer, but fewer persons have an acquaintance with a hygrometer. This instrument, which is made in numerous forms, responds to changes in the moisture content of the air. A good hygrometer furnishes accurate information, and gives us definite figures, usually in percentage, indicative of the amount of moisture the

—(Continued on p. 3.)



HOW GOOD AND BAD RECEPTION FOLLOW THE WEATHER.

In this weather map the solid lines, or isobars, connect places of equal air pressure, and indicate in this way the positions of high and low pressure areas for a given time. Note that severe storms, with accompanying static, are indicated by the very low pressure areas on the northwest and eastern coasts, while the central part of the country is enjoying the good reception that generally accompanies high-pressure areas.