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? WHY THE WEATHER ? Mailed October 26, 1927.

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MODERN FOG SIGNALS

Because the transmission of sound through the atmosphere is subject to curious aberrations, resulting in so-called "zones of silence," all acoustic fog signals, except submarine signals, are more or less undependable. The most stentorian of these devices now in use is the "diaphone," which was introduced by the Canadian lighthouse service and is now extensively employed on the coasts of the United States. It is a modification of the siren, and has been heard more than 25 miles from seaward. Submarine bells or oscillators have been installed at many places in America and elsewhere. These can be heard by a microphone device on shipboard, which also shows the direction of the signal station.

The greatest aid to navigation in foggy weather is, however, radio. At certain places submarine signals and radio signals are sent out simultaneously. As the latter reach a ship almost instantaneously while the former travel through the water at a moderate and known speed, the difference in time of receipt on shipboard shows how far the vessel is from the signal station.

Within the last few years a great number of "radiobeacons" have been installed on coasts all over the world. These send out characteristic radio signals continuously in thick weather. A device known as the "radiocompass" is used by the mariner to determine the direction of the signal and thus get a bearing. Lastly, there are also numerous "radiocompass stations." These are equipped with radiocompasses, by which they listen to signals from a vessel at sea and determine her bearing. Then by means of this bearing combined with others obtained at other stations, the vessel's position is worked out and reported to her by radio.

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