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? WHY THE WEATHER ? Mailed October 6, 1930

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VISIBILITY OF THE HORIZON

Because of its vital importance in relation to aircraft, "visibility" has become one of the most interesting elements of weather. Meteorologists describe under this name the transparency of the atmosphere, as measured by the distance at which objects may be clearly seen. Visibility is measured in various ways; usually without the aid of instruments, though certain types of "visibility-meter" have been employed to a limited extent.

An ingenious method of measuring visibility over the sea adjacent to a coast has been put in operation in the island of Malta. An observer standing on the shore and looking seaward generally has no fixed objects in front of him to aid in determining visibility. At Malta this difficulty has been overcome by noting the visibility of the horizon from stations at three different altitudes. The distance of the horizon varies with altitude. From the lowest station, 20 feet above sea level, it is 6 miles away; from the next higher, 80 feet above sea level, 12 miles away; and from the highest station, 400 feet above sea level, 28 miles away.

As the observers at these three points are looking through very different thicknesses of atmosphere, a general haze over the ocean may prevent the observer at the highest station from seeing the horizon when it is visible at one or both of the lower points, or it may be indistinctly seen above and clearly seen below, etc. On the other hand, a local haze or fog close to the shore may hide the horizon from the lowest observer, while, unless the obscurity extends to an exceptional height, the observer at the lofty station will look over it and see the horizon beyond.

Thus a comparison of observations at the three stations indicates the density of haze or fog and shows whether it is general or confined to inshore waters.

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