

A Science Service Feature

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? WHY THE WEATHER ?

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IMPROVEMENTS IN FOG SIGNALS

All acoustic fog signals whose sound is transmitted through the air - including horns, whistles, sirens, bells, etc. - are subject to wellknown aberration, which have been responsible for many shipwrecks. Curious "zones of silence", permanent or temporary, occur comparatively near the source of sound while at places much farther away the signal may be plainly audible. These peculiarities are by no means confined to foggy weather and they are supposed to be due mainly to eddies or other movements of the atmosphere. When the Pacific Mail steamer "Rio de Janeiro," entering San Francisco harbor in a dense fog on February 22, 1901, struck a reef and went down with a loss of 130 lives, three signals were in operation near enough to be audible in ordinary circumstances but none were heard on board. Neither was the vessel's whistle, blown as a distress signal, heard at a life-saving station half a mile distant.

Submarine bells, now installed at many places on coasts, are much more dependable than signals sounded in air. There are special microphone receivers for use on shipboard which enable the navigator to determine the direction of a submarine bell from his vessel. A combination of submarine bell signal and radio signal, as operated at the Nantucket Shoals lightship, can be used for getting the distance as well as the direction of the signal station.

The latest and best aids to navigation in foggy weather are the radiobeacons and radiocompass stations that have become common within the last four or five years.

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