

COMPASS DEVIATION OF A SHIP STRUCK BY LIGHTNING

(Extracted from "The Monthly Record" appearing in *The Geographical Journal*, London, March 1935).

Captain F. CLEGG, Master of the S.S. *Boma* of the Elder Dempster Line, reported as follows: On November 13, 1934, in Lat. $41^{\circ}00'59''$ N., Long. $10^{\circ}00'09''$ W., during a hard squall, the ship was enveloped in a vivid flash of lightning with what sounded like the burst of a high explosive shell overhead. The steering compass oscillated over an arc of about 180° , finally settling down 28° off the compass course, while no alteration had occurred in the standard compass. On November 17, off Grand Canary, the ship was swung and the deviations obtained on both compasses, the standard compass being quite unaffected, but the steering compass considerably disturbed on all points. The steering compass was then compensated with some difficulty and reduced to a small residual deviation. 3° E. on an easterly course was the greatest error showing, and this remained constant during the voyage to Freetown. It was found after the storm that half the fore-truck had been broken off and two valves in the MARCONI set had been destroyed, but otherwise no damage appears to have been done to the ship. The letter with complete details of the deviations and subsequent compensation was submitted to the Hydrographic Department of the Admiralty, and the Director of the Compass Department reports to the Hydrographer that it is unusual that the maximum effect of the change in deviation should be developed on the east. He recalls that H.M.S. *Veteran* was struck by lightning in October 1926 and a deviation of 80° appeared at the steering compass, the standard being unaffected. The error of the compass gradually decreased in the next two years, and the ship then resumed her original magnetism.

REVOLVING HELIOTROPE

(Extract from *Zapiski po Hidrographii*, Leningrad, 1934, No. 1, p. 110)

The Geodesist of the 1st Section of the Hydrographic Department of the U.S.S.R., R. P. MAKSIMOV, suggests improving the visibility of marks in surveying by fixing on the marks automatic heliotropes of conical shape actuated by the wind, which will not only make them revolve but also change the inclination of their axes.

Heliotropes of this kind, of the simplest construction, have been used with success in the triangulation of Kazakstan.

The Americans use heliotropes of more complicated construction consisting of an assembly of truncated pyramids with differently inclined faces, mounted on ball bearings and fitted with cup weather-vanes.

CHECKING A DIVIDED CIRCLE BY TWO METHODS AND EXPLANATION OF THE CONTRADICTIONS FOUND

The following is a translation of an analysis by M. M. AMBARD, in the *Revue d'Optique*, Paris, April 1935, p. 163, of an article by F. MUHLIG in the *Zeitschrift für Instrumentenkunde*, Vol. 53 (1933), entitled *Untersuchung eines Teilkreises nach zwei Methoden und Aufklärung der dabei aufgetretenen Widersprüche*.

Work done during these last few years on the checking of divided circles has shown the necessity of examining the circles on the instruments themselves and in the position in which they are used. The author quotes the case of a geodetic instrument which, in measurements of azimuth, gave systematic errors attributable to periodic errors of graduation. The divided circle, removed from the instrument, was examined on a testing apparatus, and the corrections thus determined were applied to the azimuth