

Those planted ten miles further seaward were generally located by bombed distances from two other located sono-radio buoys. Experience showed that this method was not the best, or that only quart bombs should have been used. In one case an extra line of survey buoy was extended to join up with an off shore radio buoy which was then located by taut wire distance and sun azimuth. As suspected from the errors indicated by the bomb arcs from the three radio buoys it was found that the bombed location of this buoy was about 0.3 mile in error.

As a preliminary plan for control of an area such as surveyed by the *Lydonia* this season it is suggested that a row of survey buoys be established parallel to the shore about ten miles off, sono-radio buoys at ten mile intervals along the line of buoys, and spur lines of survey buoys running to off-shore radio buoys (10 miles seaward) at intervals of 20 miles. As improvements in these buoys are made, or additional proof is given that quart or other sizes of bombs are accurate over longer distances the intervals between radio buoys may be gradually increased.

One of the principal advantages in the use of radio buoys is the fact that work in foggy or hazy weather, or at night if personnel is available, can be accomplished when no other field work can be done, and without the use of station ships and their personnel.

When sufficient proof of the reliability of these buoys has been obtained it may be possible to avoid use of the usual survey buoys and survey that area immediately beyond shore control by R. A. R. buoy control.

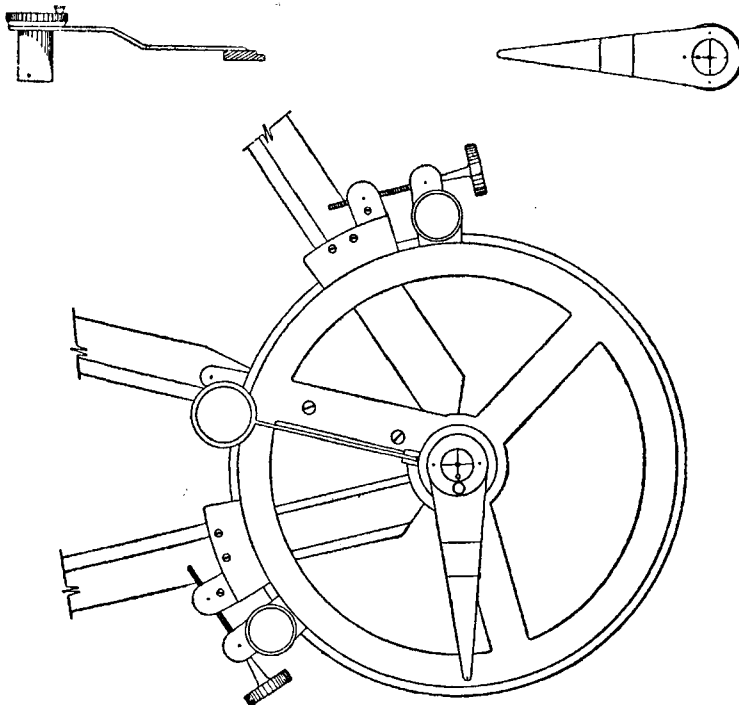
PROTRACTOR FITTING FOR WIRE DRAG

by

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(Extract from *Field Engineers Bulletin*, N° 10, Washington, December 1936, p. 159).

In plotting drag work for the past summer one of the members of the party, Mr. Gregg ELLIOTT, Jr., improvised a simple device to be used with the regular three arm steel protractor for plotting the boat position, near buoy position, and direction to far



buoy with one setting of the protractor. The device is merely the center piece with celluloid bottom containing the cross lines and center hole; a second hole was drilled at a distance from the center corresponding to the length of towline (in this particular case it was 50 meters); on the upper part of the center piece a pointer was mounted in line with the two holes and reaching to the graduated limb of the protractor. In plotting, the fix gives the position of the boat (center hole), then the buoy angles are set with the pointer and spotted through the offset hole, the near buoy being plotted direct and a short direction obtained to far buoy. (This latter direction used as a check only as dual control was used).

Different lengths of towline or sheets of different scale would, of course, require different center pieces which could be made up easily.

A GRAPHICAL METHOD FOR CALCULATING THE CORRECTIONS ON DEEP-SEA REVERSING THERMOMETERS.

by

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The *Journal du Conseil Permanent International pour l'Exploration de la Mer*, Vol. XII, N° 1, Copenhagen, April, 1937, publishes under the above title an article stating that the calculation of the corrections on deep-sea reversing thermometers may be considerably shortened by the use of nomographs.

The nomograph peculiar to each thermometer furnishes thus straight off the correction to be applied to the reading on the deep-sea thermometer to obtain the temperature *in situ*.

THE MEASUREMENT OF SHORT DISTANCES BY RANGE-FINDER

by

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(Reprint from *Geographical Journal*, Vol. XC N° 3, London, September 1937, page 265, by kind permission of the *Royal Geographical Society*).

Most range-finders of the patterns available to surveyors do not read shorter distances than 250 metres, or 250 yards when the instrument is graduated in yards. The following enables distances below these limits to be determined with about the same accuracy as by a tacheometer, and has been devised and used by the Desert Surveys in Egypt.

Two similar marks, big enough to be seen clearly through the range-finder at the required distance, are made on any convenient rod or stick at exactly 60 cms. apart for the 80-cms. base instruments, and at 75 cms. apart for those with the 1-metre base. In Egypt two white-painted rings, each 1 cm. wide, on the stick of the surveying umbrella, have proved very suitable. Where there is no such stick among the equipment, two white marks on a portion of a measuring tape would do. This marked stick or tape is held horizontally at the point whose distance is required, the stick being at right angles to the line of sight from the instrument.