

HINTS TO HYDROGRAPHIC SURVEYORS

OBSERVATIONS OF TIDAL STREAMS IN DEEP WATER

carried out by H.M.N.Z.S. « Lachlan »

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An interesting and simple development has been the 24 hours' observation of tidal streams in a position 15 miles east of Kaikoura Light, in 800 fathoms.

2) The hourly observations were made by manœuvring the ship to drop an upright 30 foot pole (representing deep draught ships) with the top just out of the water, and measuring its progress floating in the stream, past a string of small buoys whose total length apart is 600 feet. The direction of the stream was obtained by the line of the buoys. The first buoy was anchored by taut wire, stretched taut for 1 1/2 miles, both up and down tide. A current drogue was hung at 3 fathoms below the last buoy.

3) The wire is laid with a 1 3/4 cwt sinker on the first end. After steaming a suitable distance, 1 1/2 miles for 800 fathoms, the buoys are streamed without stopping, a 3 fathom rope being loosely looped over the wire. A second sinker is looped over the wire and let go, after steaming a similar distance, and the wire is cut a mile or two further on.

4) Around the loop for the buoy a hand lead is shackled. A stick secured to the loop above the shackle prevents the latter from catching on the knot of the loop when the whole is streamed. The lead and shackle slide down over the two parts of the taut wire gripping them close together, where the twist in the hemp buoy rope, will twist the two parts of the wire together for a dozen turns, and prevent the buoy rope from sliding along the wire and giving false readings at the change of tide.

5) The observations in this case were made in almost perfect weather conditions, but from previous experience of laying and recovering dan buoys, anchored by taut wire in the deep open ocean, it would appear that the wire will seldom break till the wind is about force 3. On recovery of this tidal stream buoy the wires were found to be growing out at a considerable angle, below the twists, and extremely taut.

6) The difficulty of laying a buoy anchored by taut wire by any other method, is that with the ship stopped or drifting slowly, the rise and fall of the stern, in the invariable presence of the smallest swell, is sufficient, when the sinker reaches the bottom, to slacken and then snap the small gauge taut wire.

