



False Echoes in Deep Water

Faux Echos par Eau profonde

FALSE ECHOES IN DEEP WATER.

(Extract from a letter received from REAR-ADMIRAL J. A. EDGELL, O.B.E., R.N.,
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Occasional instances of false echoes are found with both sonic and super-sonic type of gear, especially in deep water. An interesting case occurred some time ago and it so happened that the records could be preserved; the same are reproduced herewith in the thought that they might be of interest to readers of *The Hydrographic Review*.

The following is an extract from the Report of H.M.S. *Challenger*.

"In April 1933 whilst steaming down the Channel in the vicinity of Start Point, soundings were being obtained of about 40 fathoms with the Deep Sea Echo Gear; the bottom was of an even depth when a report was received that the soundings were shoaling rapidly and almost at once 5 fathoms were recorded. The engines were put astern and when the wash subsided soundings of about 40 fathoms were obtained; these were checked by lead.

"A buoy was dropped and the ship steamed slowly round in the vicinity; on going ahead again the same thing occurred, soundings shoaling suddenly from 40 to 5 fathoms when, on the engines being put astern, 40 fathoms was again recorded and instantly tested by lead. This continued for some time, the phenomenon being observed whenever the ship went slowly ahead and then astern, until finally, although covering precisely the same ground near the buoy, continuous soundings of about 40 fathoms were obtained over an even bottom.

"The conclusion arrived at was that echoes were being obtained off a dense shoal of fish swimming at a depth of about 30 feet, these collecting under her bottom when the ship was going slowly ahead, but scattering whenever the engines were put astern".

A tracing giving an accurate representation of the original record is reproduced herewith. The very definite and rather alarming "shoal" appears at the point marked.

Challenger then altered course, only very faint repetitions being received, and dropped a buoy. A continuous and level bottom of approximately 40 fathoms is still shown, until arriving at the spot marked 2, where this phenomenon is again repeated, although immediately on going astern 40 fathoms is again picked up. During the course of her manoeuvring the "shoal" is again noticed at the spots marked 3 and 4, from which time on, the same level bottom is shown until 5, when the "shoal" is again found swimming,

apparently at much the same depth, but in a different place. On going astern it is dispersed.

There appears no doubt at all that this phenomenon was produced as suggested by *Challenger*, by a dense shoal of fish swimming underneath the ship's bottom and dispersing when the action of the propeller going astern was felt.

Incidentally, it is worthy of note that the echo still showed a depth of 40 fathoms *through* the layer of fish! This can be seen in several instances on the records.

