

## THE ONO SELF-RECORDING CURRENT METER

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On the occasion of the Vth International Hydrographic Conference held in Monaco in April-May 1952, the Japanese Delegation to the Conference gave the International Hydrographic Bureau a model of the Ono self-recording Current Meter.

A short description of this instrument and a figure showing the outside view are given below.

The purpose of the Ono self-recording current meter is to record automatically and over long periods, the velocity and direction of tidal currents.

In the annexed sheet, photograph « A » is a complete view of the instrument and a fitting, « B », in front on the picture, is installed in the watertight compartment immediately on the right of propeller « 1 ».

Revolutions of the propeller are transmitted to the watertight compartment by means of a magnet fitted at the foot of the propeller shaft and also by magnet « 2 » of fitting « B ».

« 3 » in the picture is a worm gear.

« 4 » — a gear.

« 5 » — a cam.

« 6 » — a lever which moves up and down through the action of the cam « 5 » in synchronization with the revolution of magnet « 2 », the other end of this lever moving the axis of a magnetic needle, « 7 ». There are 4 pens inked with 4 different colours fitted 90° apart from each other on the magnetic needle; they mark one point for each 100 revolutions of the propeller.

By clockwork inside the drum, the blank paper, « 8 », is rolled up on the drum, « 9 », at the rate of 1 millimeter per minute.

The numbers of the points marked denote velocity; the colour and position indicate the direction of the current.

As the rolled paper is 4.5 meters long, 3 days' continuous observations can be recorded.

In photograph « C », the upper picture indicates records of observations taken in smooth sea, the middle picture indicates records taken in rough sea, the marked points showing as lines (circular arc), and the lower picture shows a scale for reading the velocity and direction of the current observed.

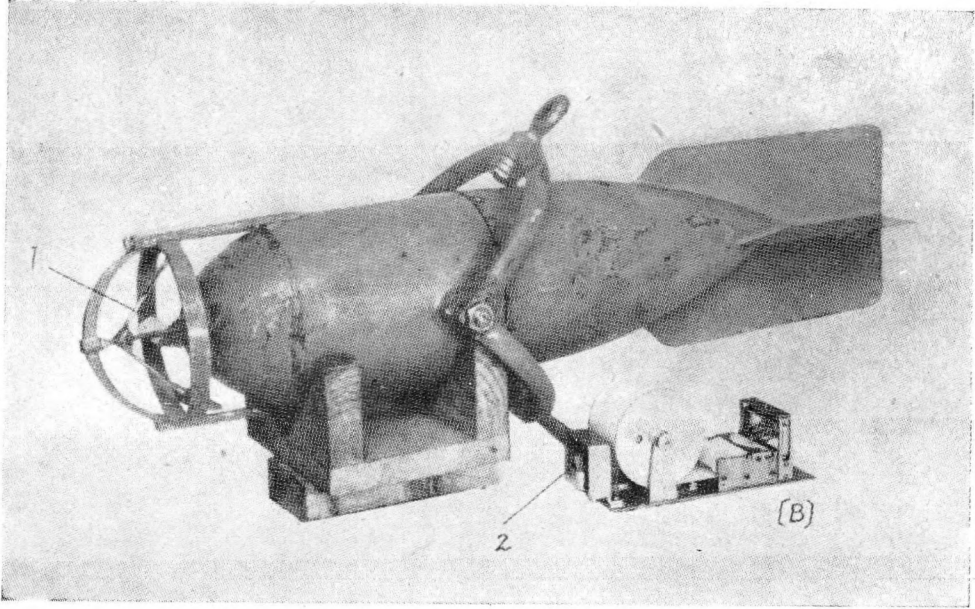
Photograph « D » indicates the aspect of the instrument set in Tugaru Strait when the current attained about 4 knots; « 10 » and « 11 » are buoys of 75 kilogramme buoyancy; the instrument is hung underneath buoy « 11 » at a depth of 5 metres.

« 12 » are flagmark and light and they are made fast to an anchor underneath buoy « 10 ».

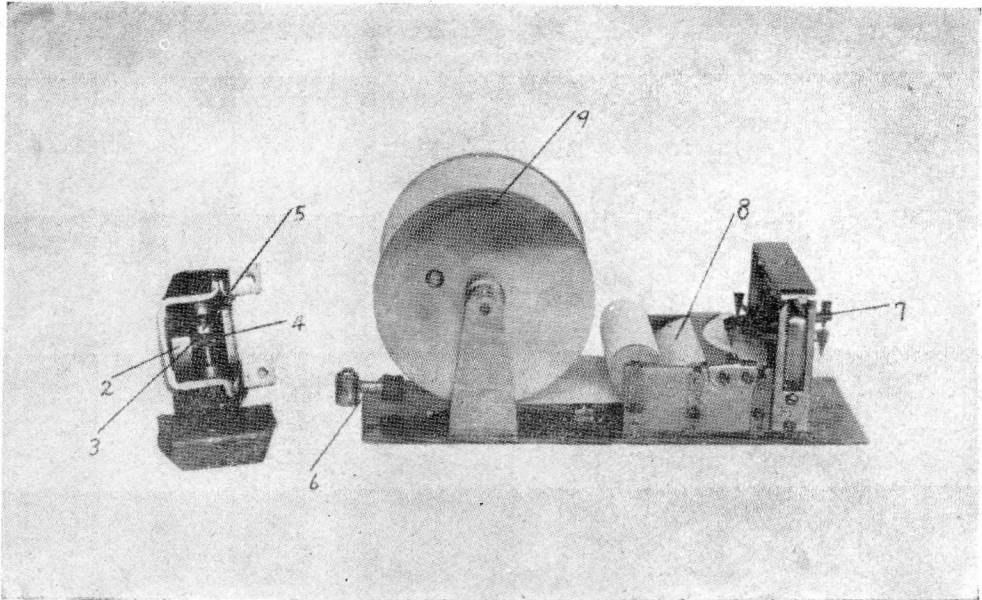
*Additional note :*

When the sea is very rough, the point will come out as an arc, and reading of velocity will become uncertain, but this trouble was recently overcome by fitting another recording pen for velocity on one end of the lever. Fig. « E » shows the records taken at the mouth of Tokyo Bay in winter time, with a pen fitted for velocity. « F » is a part of the plan.

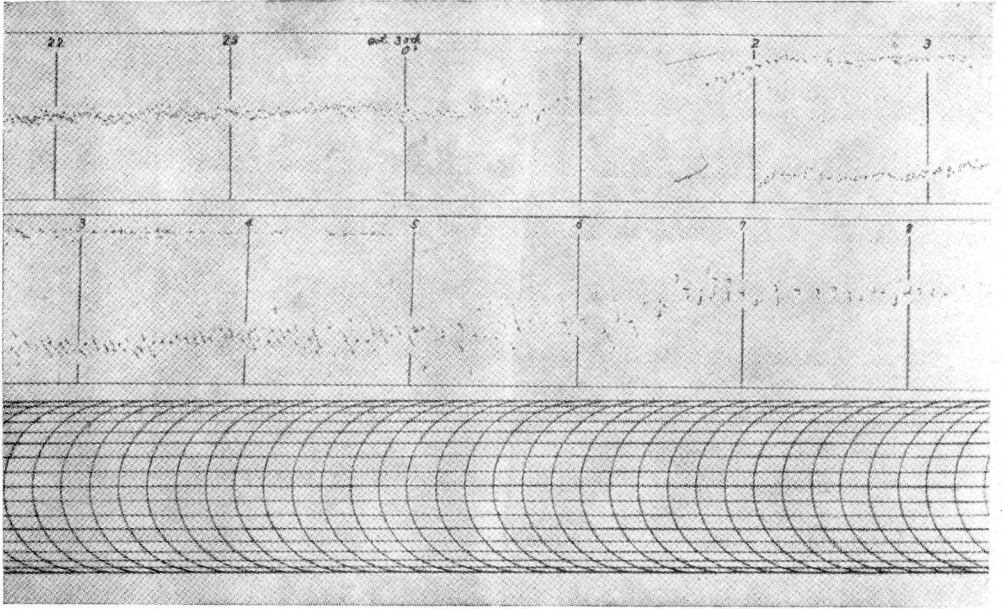
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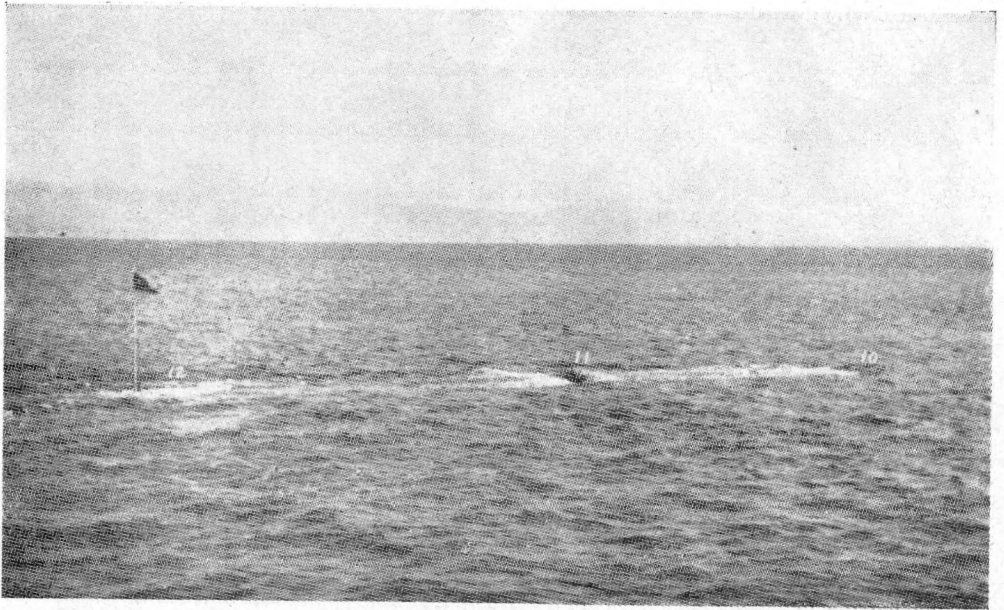
(A)



(B)

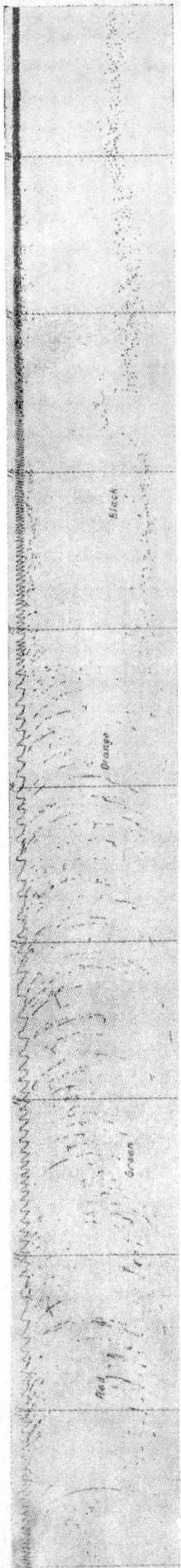


(C)



(D)

(E)



(F)

